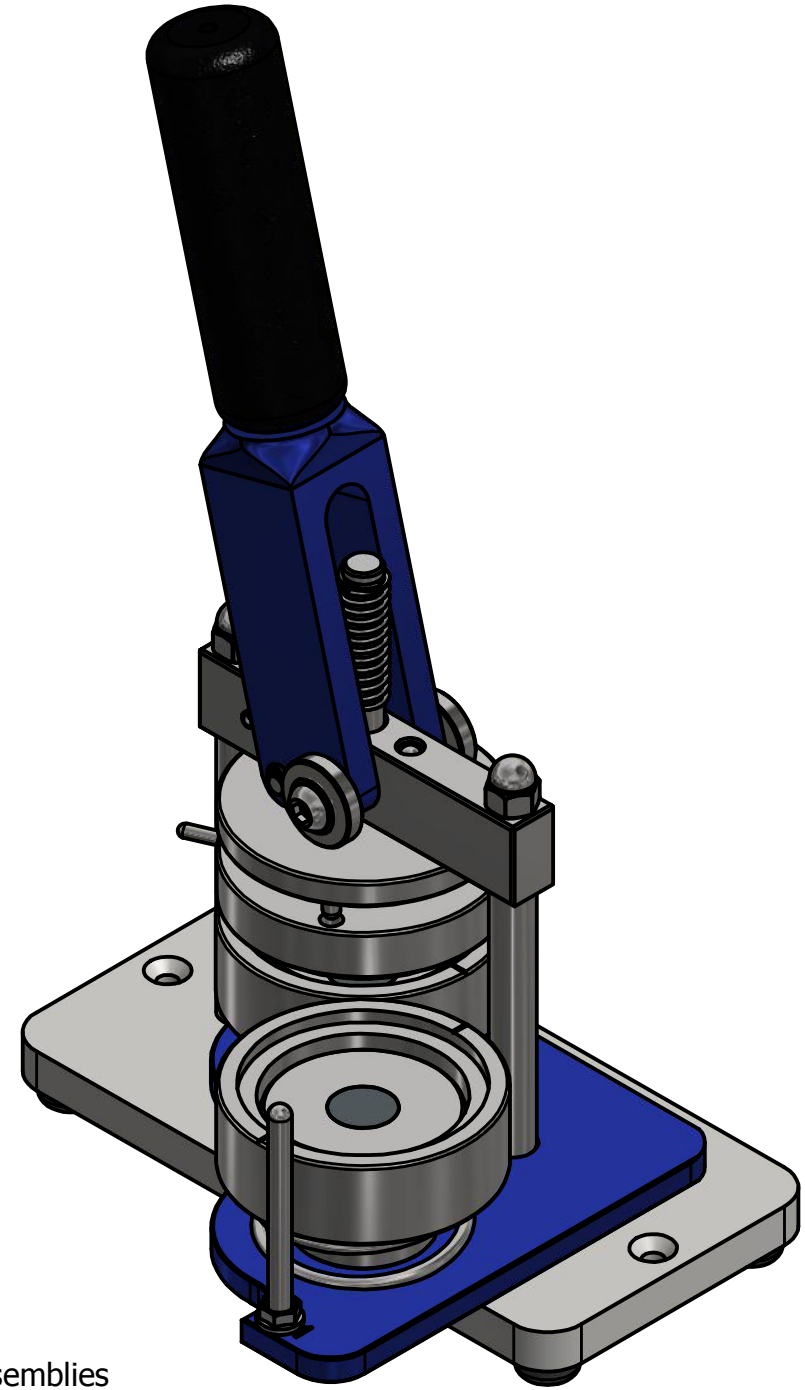
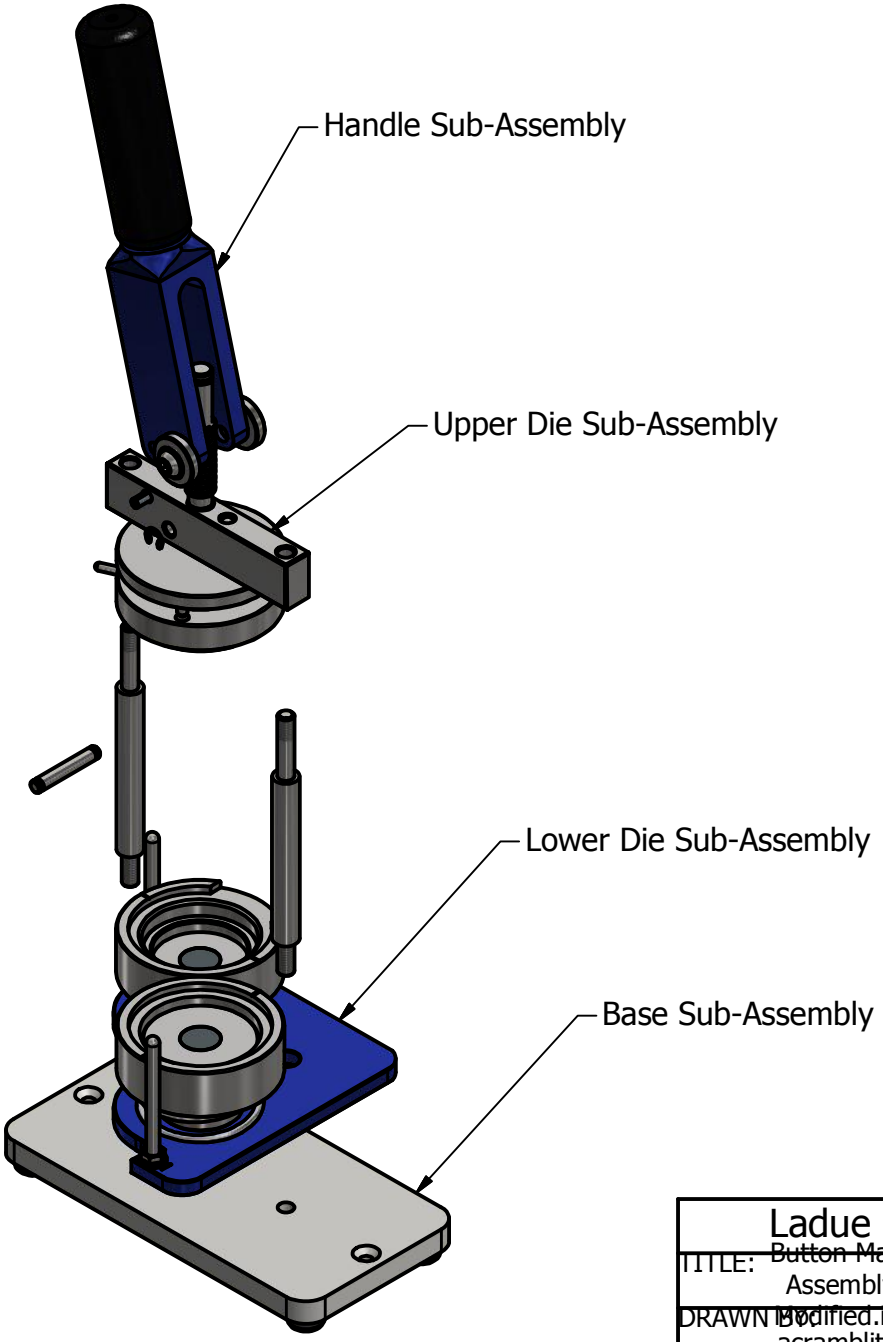
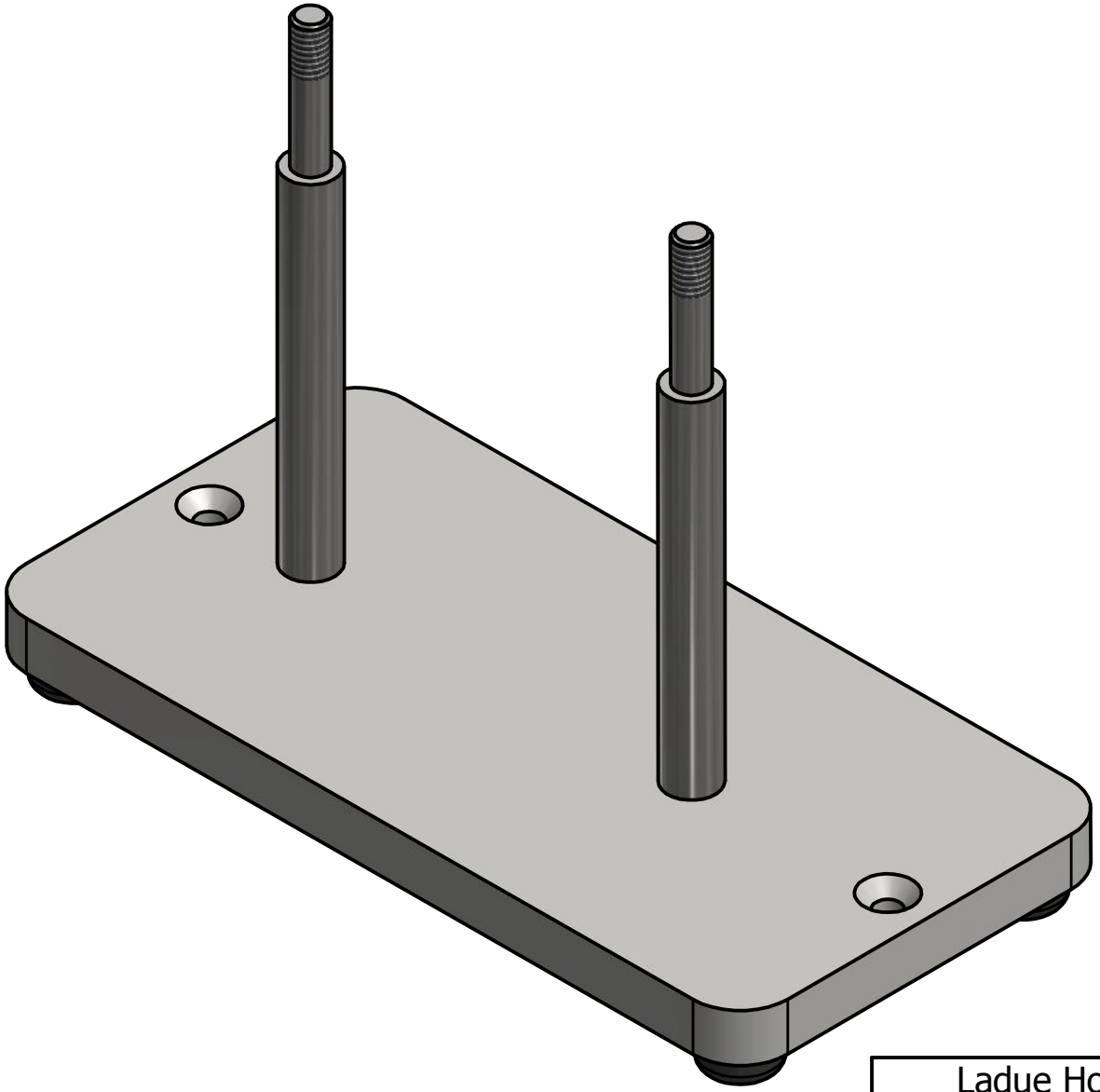


Note: See sub-assemblies for parts lists

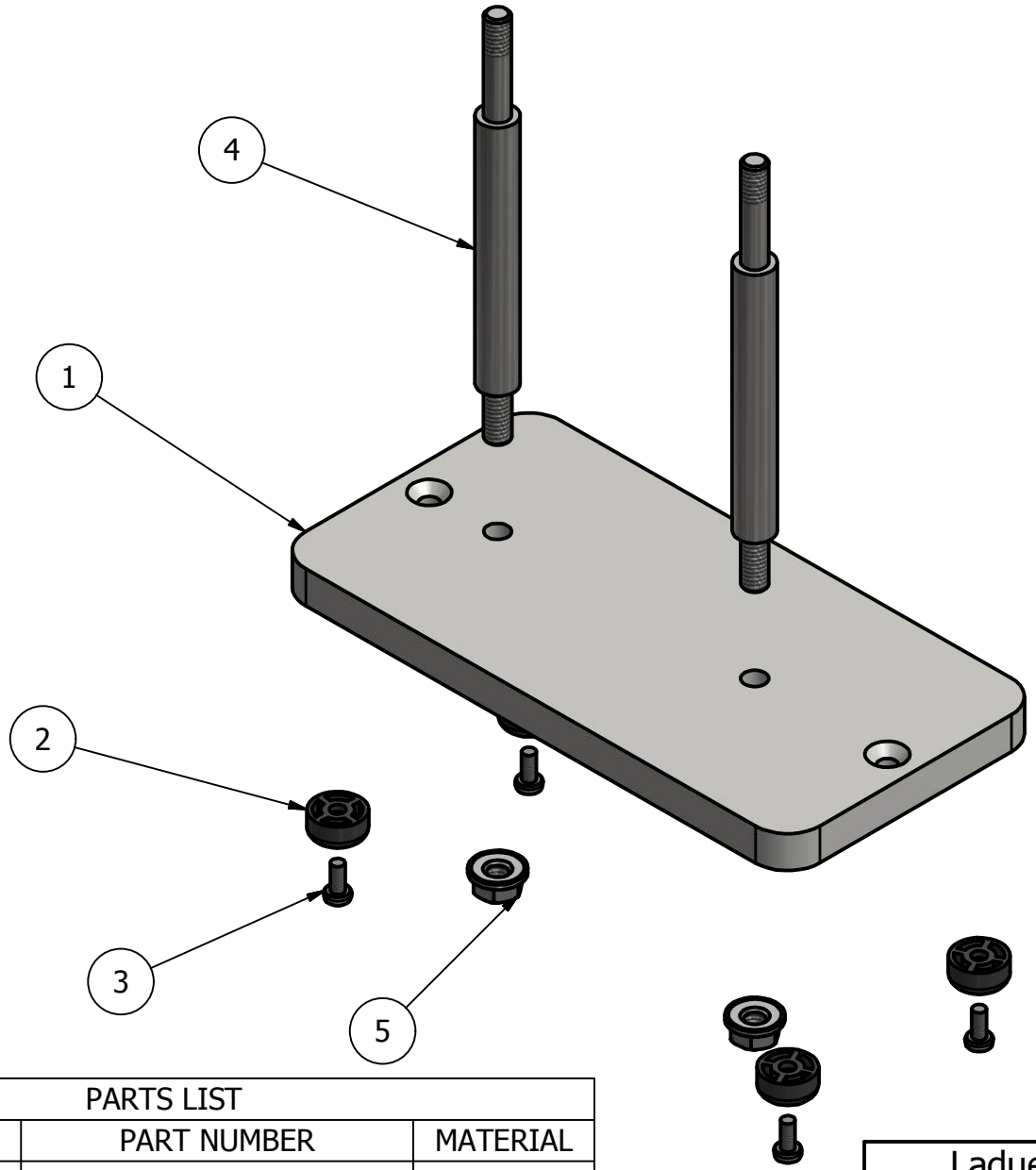
Ladue Horton Watkins High School					
TITLE: Button Maker Assemblyh Modified.iam	PROJECT:				
DRAWN BY: acramblitt85	DATE: 4/25/16				
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 1:2	SHEET: 1	SIZE: A	



Ladue Horton Watkins High School					
TITLE: Button Maker Assemblyh Modified.iam		PROJECT:			
DRAWN BY: acramblitt85		DATE:			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 2:7	SHEET: 2	SIZE: A	

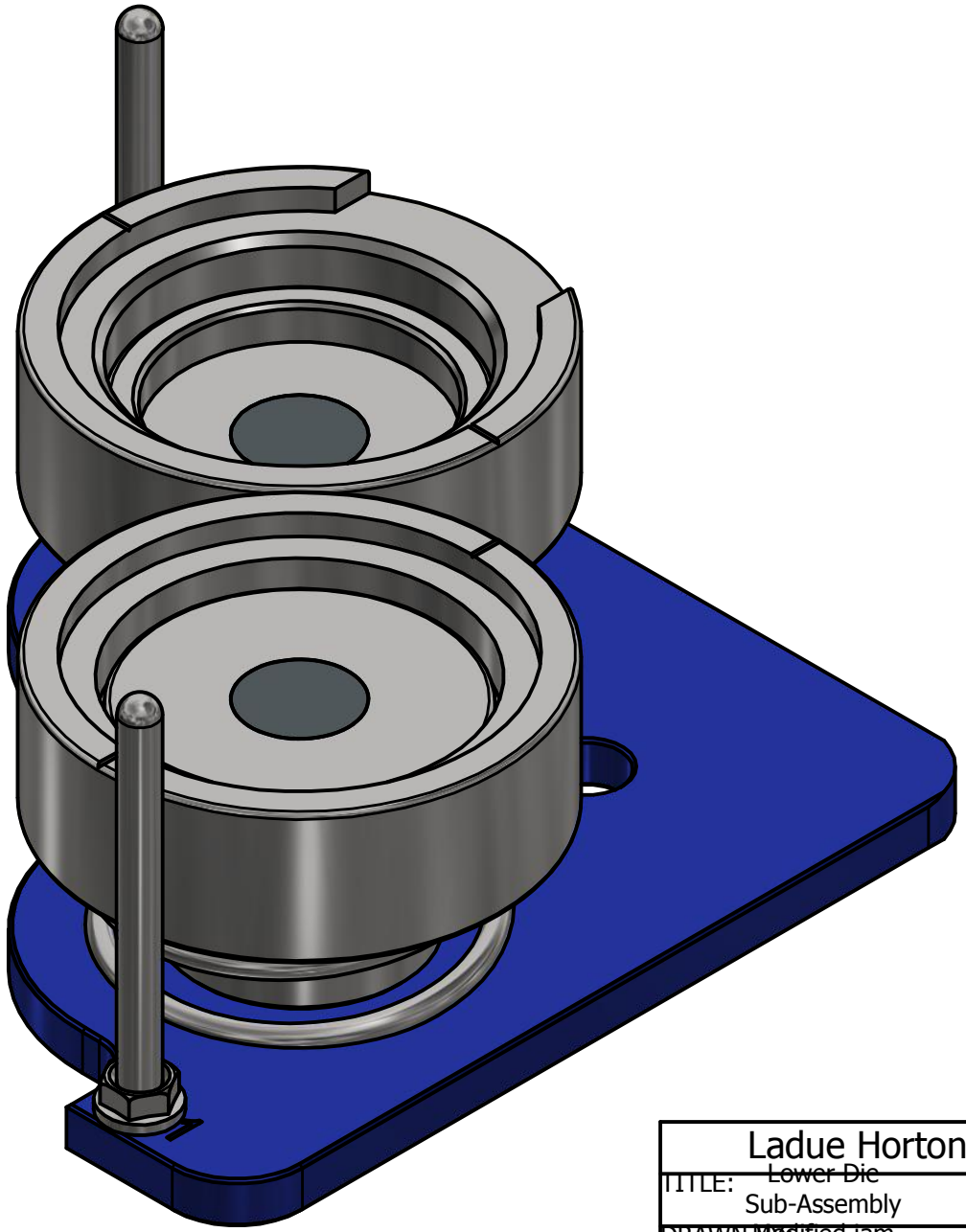


Ladue Horton Watkins High School					
TITLE: Base Sub-Assembly Modified jam		PROJECT:			
DRAWN BY: acramblitt85		DATE: 4/25/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 3/4	SHEET: 3	SIZE: A	

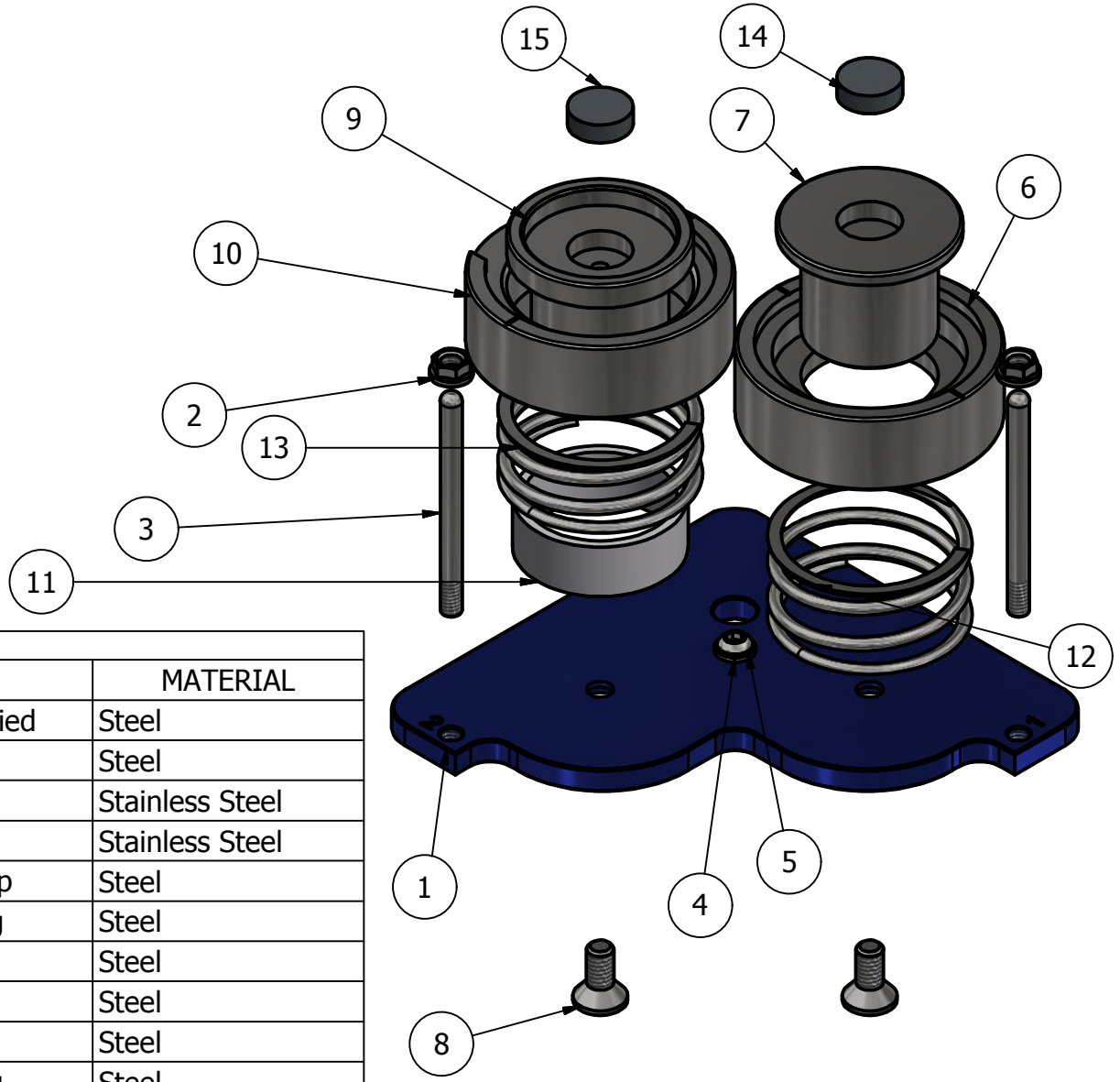


PARTS LIST			
ITEM	QTY	PART NUMBER	MATERIAL
1	1	PartA1 Base Plate Modified	Steel
2	4	PartA2 Rubber Foot	Rubber
3	4	PartD8 8-32 UNC Screw	Steel
4	2	PartA4 Vertical Support	Steel
5	2	PartA5 5-16-18 Nut	Steel

Ladue Horton Watkins High School				
TITLE: Base Sub-Assembly Modified jam		PROJECT:		
DRAWN BY: acramblitt85		DATE: 5/2/16		
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 1:2	SHEET: 4	SIZE: A



Ladue Horton Watkins High School					
TITLE: Lower Die Sub-Assembly		PROJECT:			
DRAWN BY: Modified.iam acramblitt85		DATE: 4/25/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 1:1	SHEET: 5	SIZE: A	



PARTS LIST

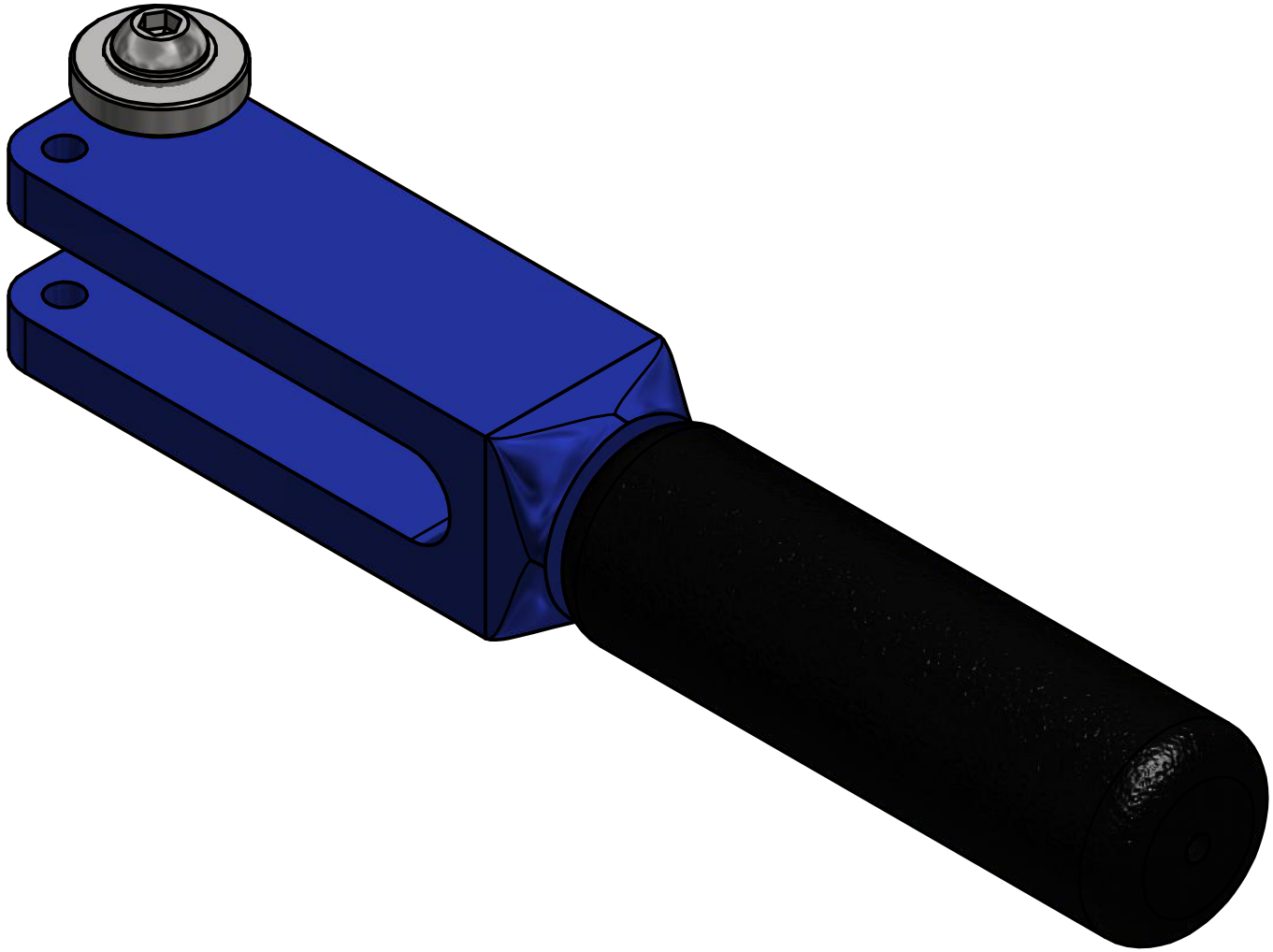
ITEM	QTY	PART NUMBER	MATERIAL
1	1	PartB1 Bottom Die Plate Modified	Steel
2	2	PartB2 5_16x1 Nut	Steel
3	2	PartB3 Sequence Lever Arm	Stainless Steel
4	1	PartB4 1-4 Washer	Stainless Steel
5	1	PartB5 1-4-20x5-16 Button Cap	Steel
6	1	PartB6 Lower Die 1 Outer Ring	Steel
7	1	PartB7 Lower Die 1 Center	Steel
8	2	PartB8 1-4-20 Socket Screw	Steel
9	1	PartB9 Lower Die 2 Center	Steel
10	1	Part10 Lower Die 2 Outer Ring	Steel
11	1	PartB11 Lower Die 2 Spacer	Aluminum-6061
12	1	PartB12 Bottom Die Spring 1	Steel
13	1	Part13 Bottom Die Spring 2	Steel
14	1	PartB14 Magnet 1	Iron, Gray
15	1	PartB15 Magnet 2	Iron, Gray

Ladue Horton Watkins High School

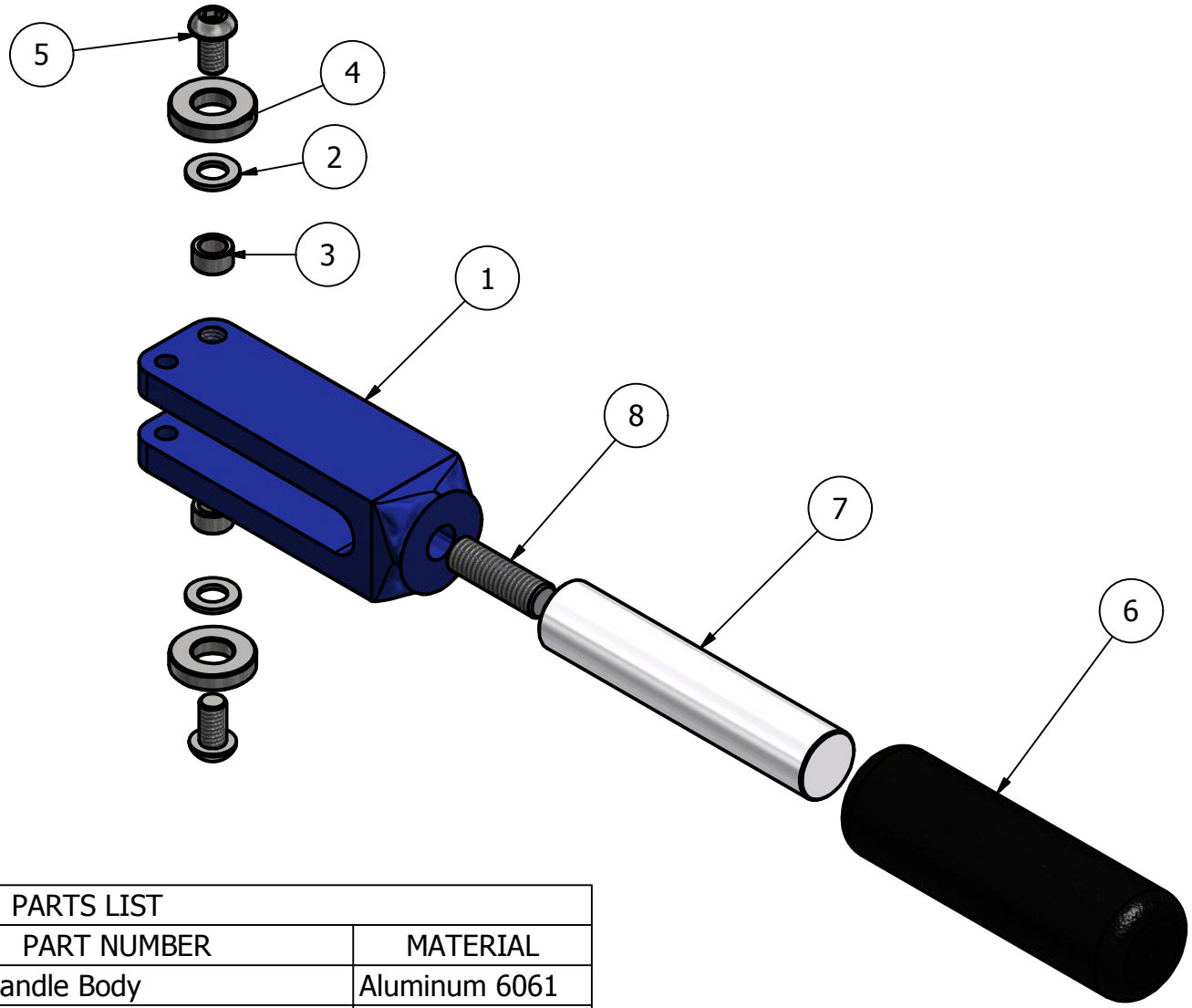
TITLE: Lower Die Sub-Assembly	PROJECT:
DRAWN BY: acramblitt85	DATE: 5/3/16

LADUE ENGINEERING

GENERAL DIMENSIONS		SCALE:	SHEET:	SIZE:
X.X	± 0.1	1:2	6	A
X.XX	± 0.01			
X.XXX	± 0.001			



Ladue Horton Watkins High School					
TITLE: Handle Sub-Assembly.iam		PROJECT:			
DRAWN BY: acramblitt85		DATE: 4/25/16			
LADUE ENGINEERING	GENERAL DIMENSIONS X.X ± 0.1 X.XX ± 0.01 X.XXX ± 0.001	SCALE: 1:1	SHEET: 7	SIZE: A	



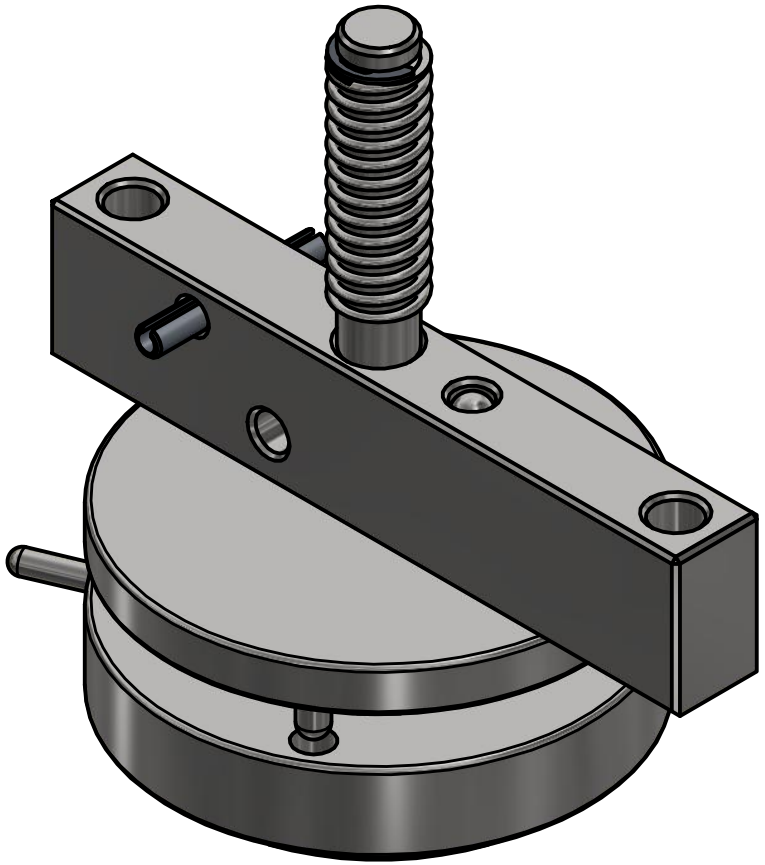
PARTS LIST			
ITEM	QTY	PART NUMBER	MATERIAL
1	1	PartC1 Handle Body	Aluminum 6061
5	2	PartC5 5_16x1_25 Button Cap	Steel
4	2	PartC4 Roller Outer Bearing	Steel
3	2	PartC3 Roller Inner Bearing	Steel
2	2	PartC2 Roller Spacer	Steel
6	1	PartC6 Rubber Handle Sleeve	Rubber
7	1	PartC7 Metal Handle Insert	Aluminum-6061
8	1	PartC8 4 7-16-14 Socket Set Screw	Steel

Ladue Horton Watkins High School

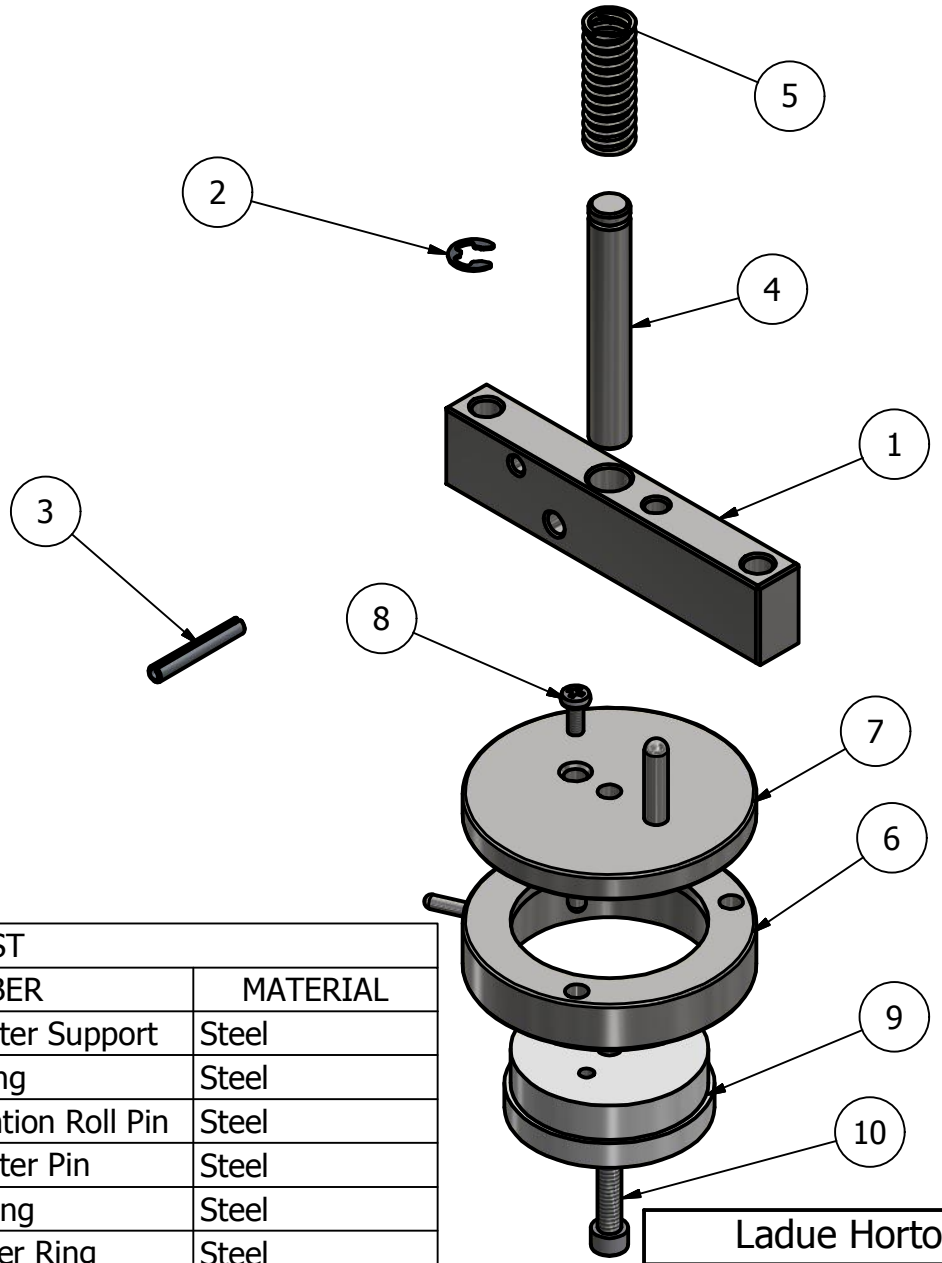
TITLE: Handle Sub-Assembly.iam	PROJECT:
DRAWN BY: acramblitt85	DATE:

LADUE ENGINEERING

GENERAL DIMENSIONS		SCALE:	SHEET:	SIZE:
X.X	± 0.1	1:2	8	A
X.XX	± 0.01			
X.XXX	± 0.001			



Ladue Horton Watkins High School					
TITLE: Upper Die Subassembly.iam		PROJECT:			
DRAWN BY: acramblitt85		DATE: 4/25/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 1:1	SHEET: 9	SIZE: A	



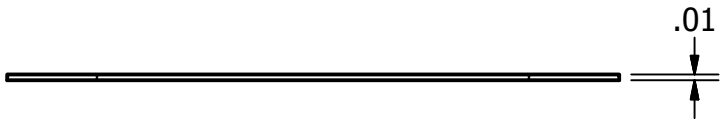
PARTS LIST			
ITEM	QTY	PART NUMBER	MATERIAL
1	1	PartD1 Upper Die Center Support	Steel
2	1	PartD2 Large Snap Ring	Steel
3	1	PartD3 Handle Rentention Roll Pin	Steel
4	1	PartD4 Upper Die Center Pin	Steel
5	1	PartD5 Upper Die Spring	Steel
6	1	PartD6 Upper Die Outer Ring	Steel
7	1	PartD7 Upper Die Pressure Ring	Steel
8	1	PartD8 8-32 UNC Screw	Steel
9	1	PartD9 Upper Die Center	Aluminum 6061
10	1	PartD10 1_4x1 Socket Head	Steel

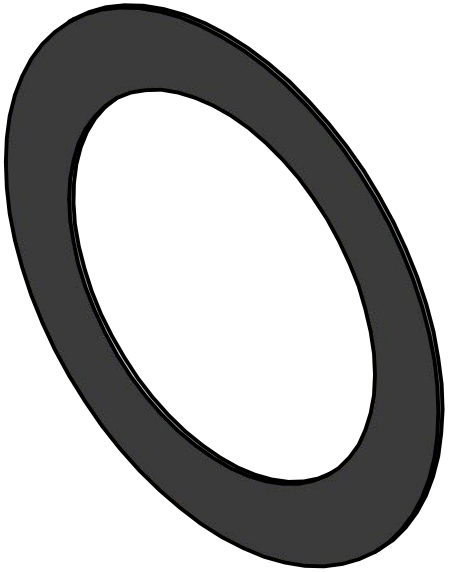
Ladue Horton Watkins High School

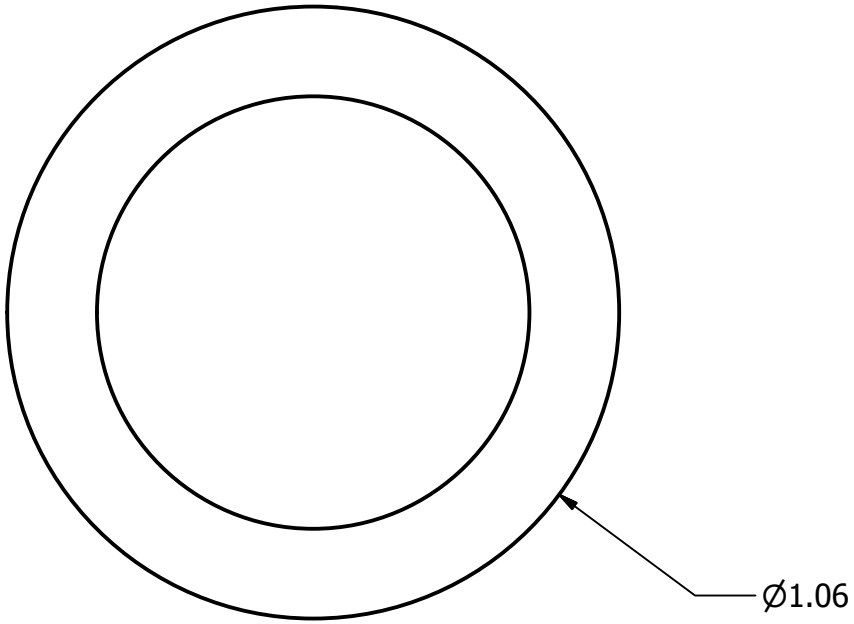
TITLE: Upper Die Subassembly.iam	PROJECT:
DRAWN BY: acramblitt85	DATE:

LADUE ENGINEERING

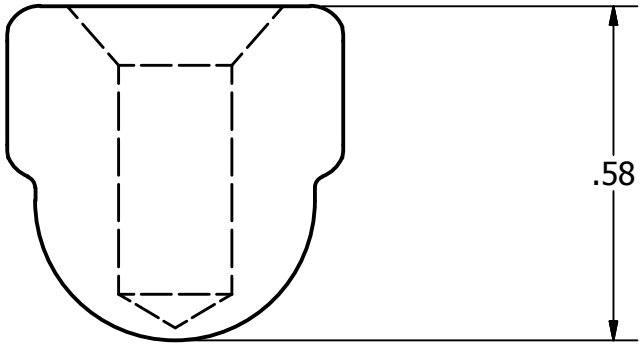
GENERAL DIMENSIONS		SCALE:	SHEET:	SIZE:
X.X	± 0.1	1:2	10	A
X.XX	± 0.01			
X.XXX	± 0.001			

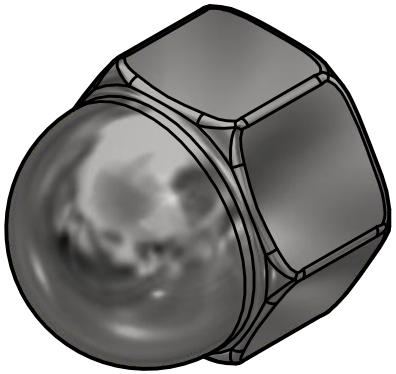


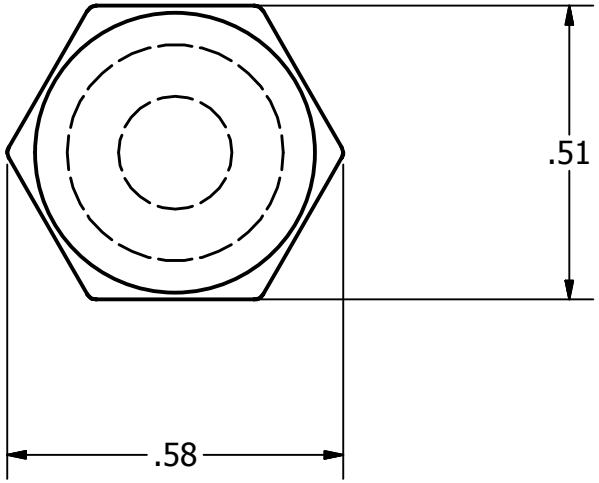




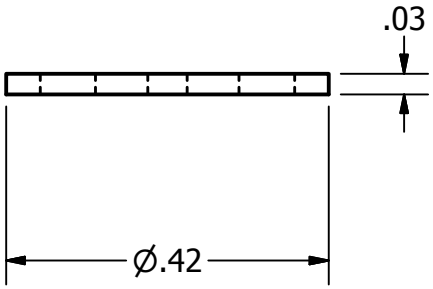
Ladue Horton Watkins High School					
TITLE: Part1 Base Bearing Ring.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/25/16			
LADUE ENGINEERING	GENERAL DIMENSIONS X.X ± 0.1 X.XX ± 0.01 X.XXX ± 0.001	SCALE: 3:1	SHEET: 11	SIZE: A	

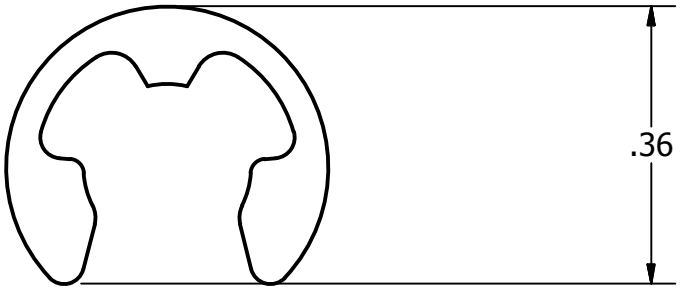


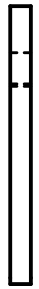




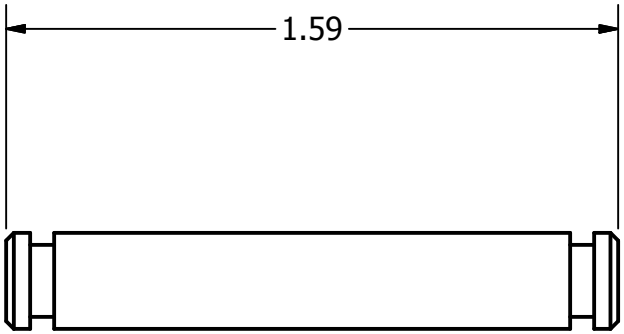
Ladue Horton Watkins High School					
TITLE: Part2 9 1-4-20 Cap Nut.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/25/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 3:1	SHEET: 12	SIZE: A	

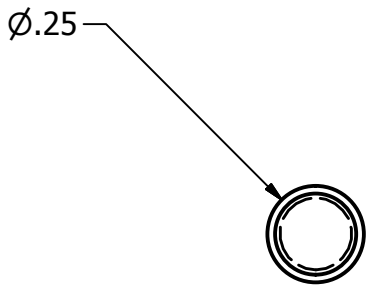




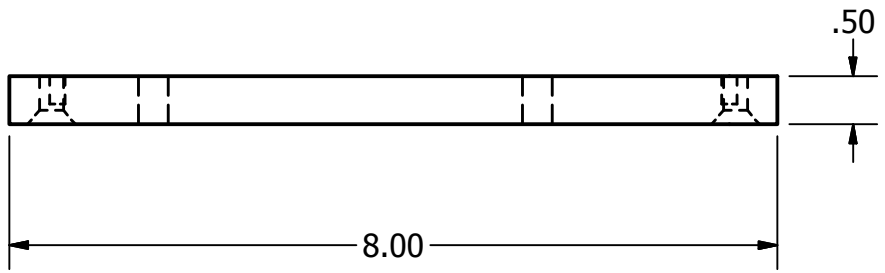


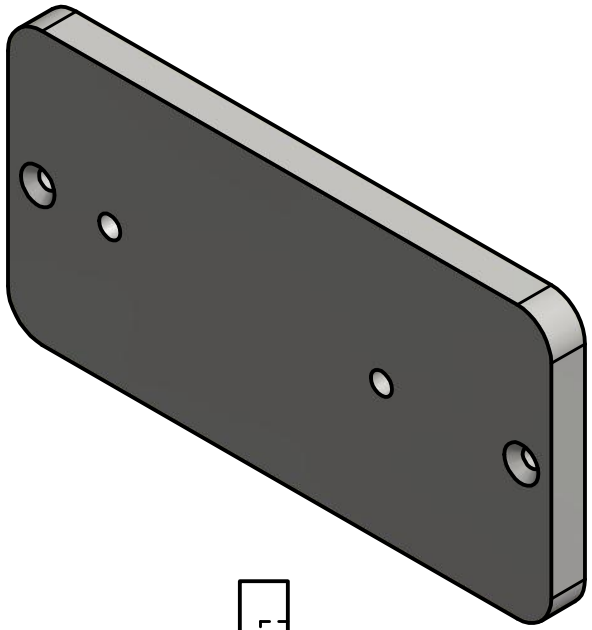
Ladue Horton Watkins High School					
TITLE: Part3 Small Snap Ring.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/25/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 4:1	SHEET: 13	SIZE: A	

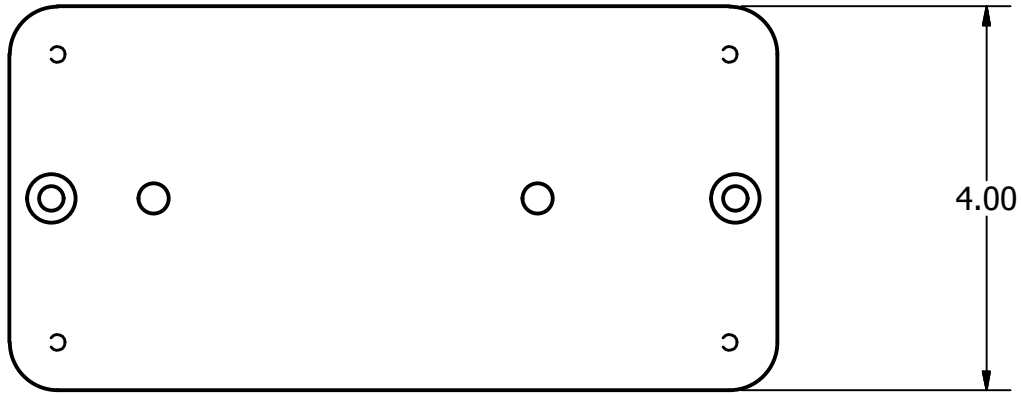


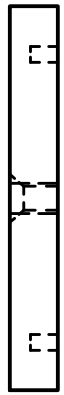


Ladue Horton Watkins High School					
TITLE: Part4 Handle Pivot Pin.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/25/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 2:1	SHEET: 14	SIZE: A	

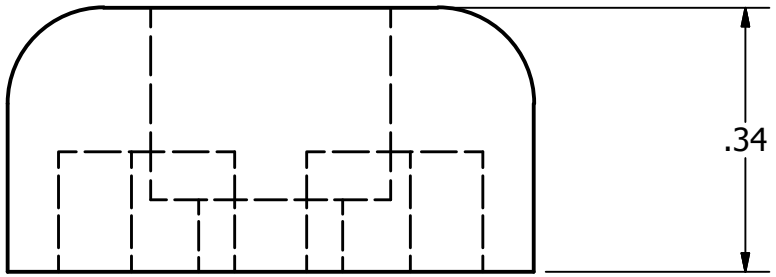


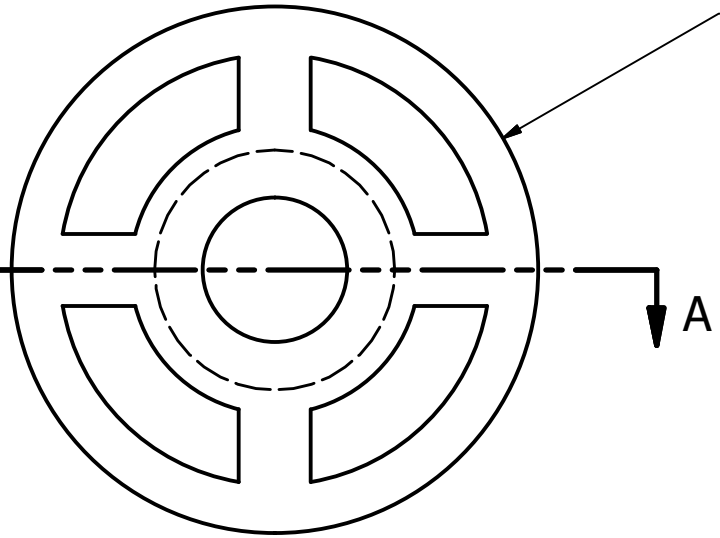


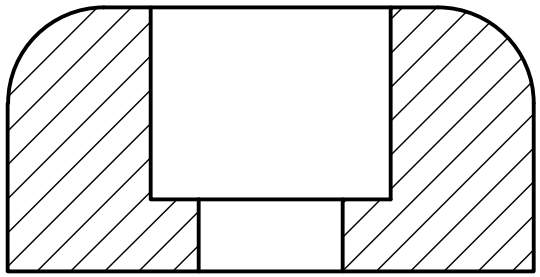




Ladue Horton Watkins High School					
TITLE: PartA1 Base Plate Modified.ipt		PROJECT:			
DRAWN BY: acramblitt85		DATE: 4/25/16			
LADUE ENGINEERING	GENERAL DIMENSIONS X.X ± 0.1 X.XX ± 0.01 X.XXX ± 0.001	SCALE: 1:2	SHEET: 15	SIZE: A	

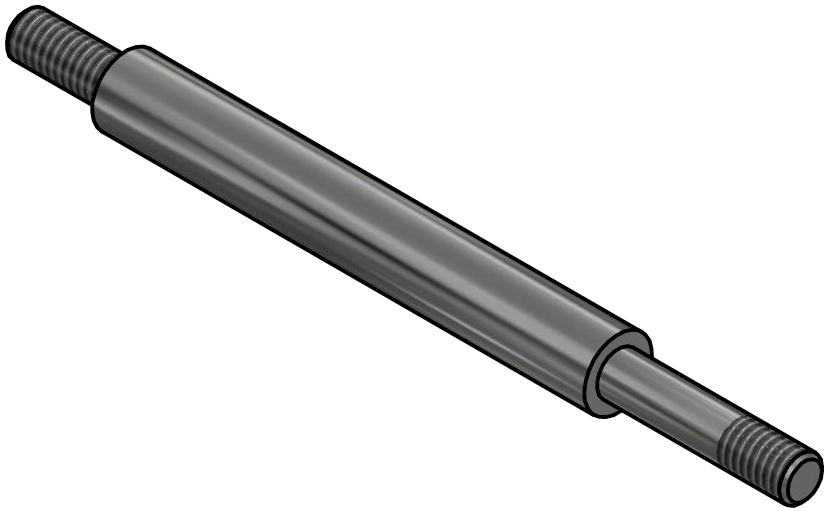


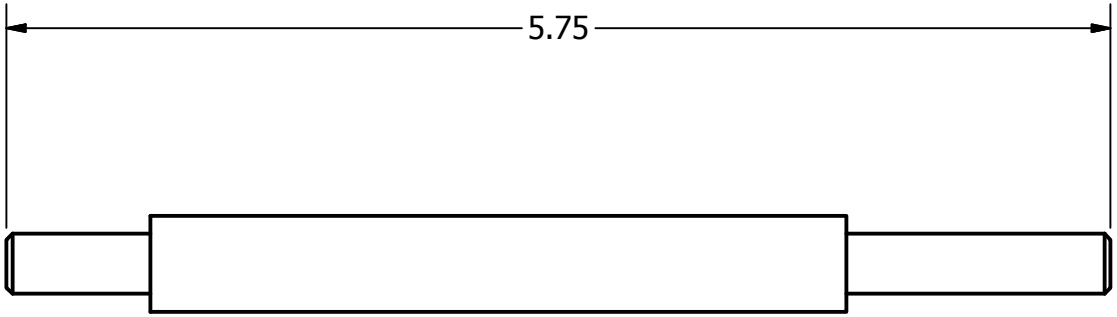


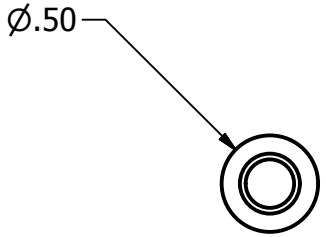


SECTION A-A
SCALE 4 : 1

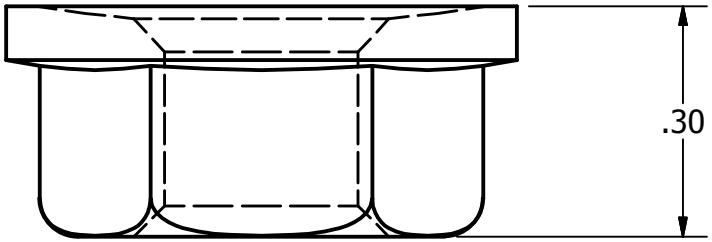
Ladue Horton Watkins High School					
TITLE: PartA2 Rubber Foot.ipt		PROJECT:			
DRAWN BY: acramblitt85		DATE: 4/26/15			
LADUE ENGINEERING	GENERAL DIMENSIONS X.X ± 0.1 X.XX ± 0.01 X.XXX ± 0.001	SCALE: 4:1	SHEET: 16	SIZE: A	

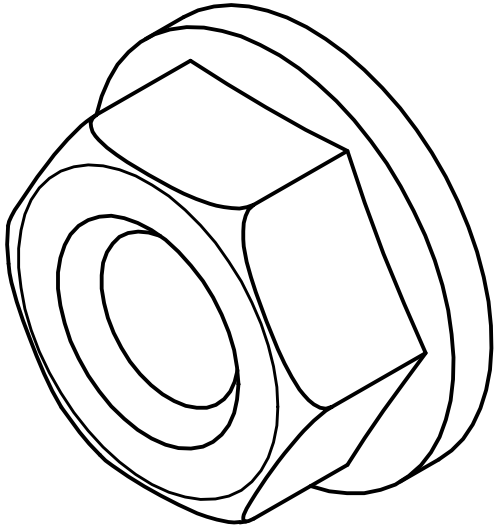


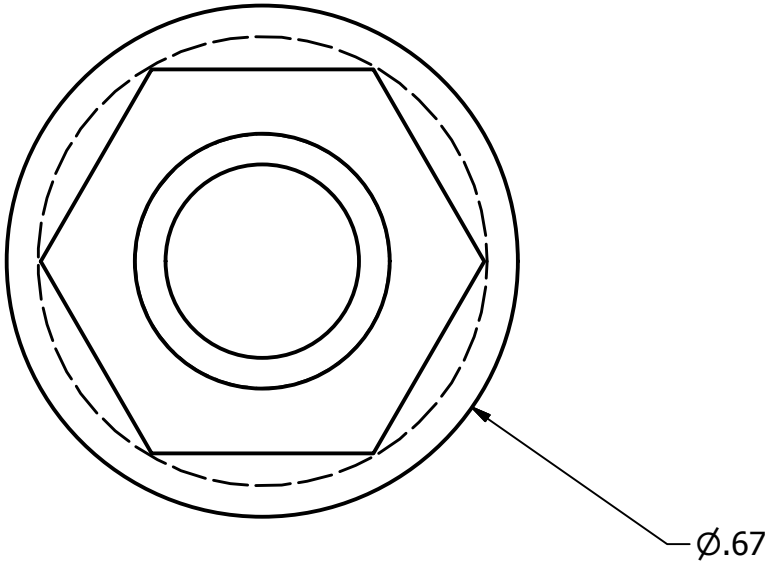




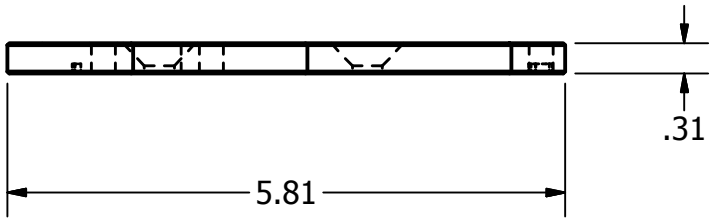
Ladue Horton Watkins High School					
TITLE: PartA4 Vertical Support.ipt		PROJECT:			
DRAWN BY: acramblitt85		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 1:1	SHEET: 17	SIZE: A	

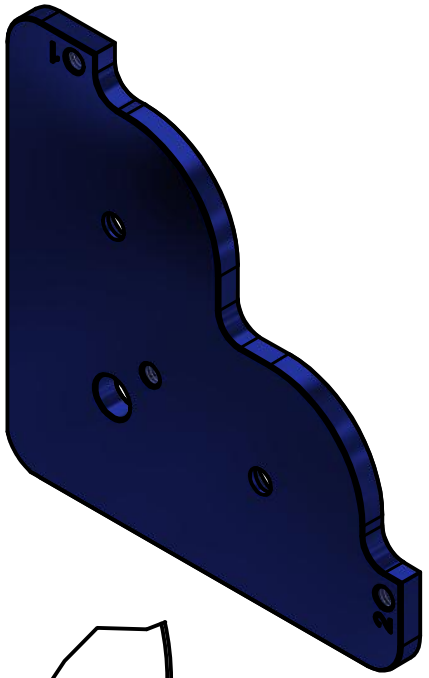


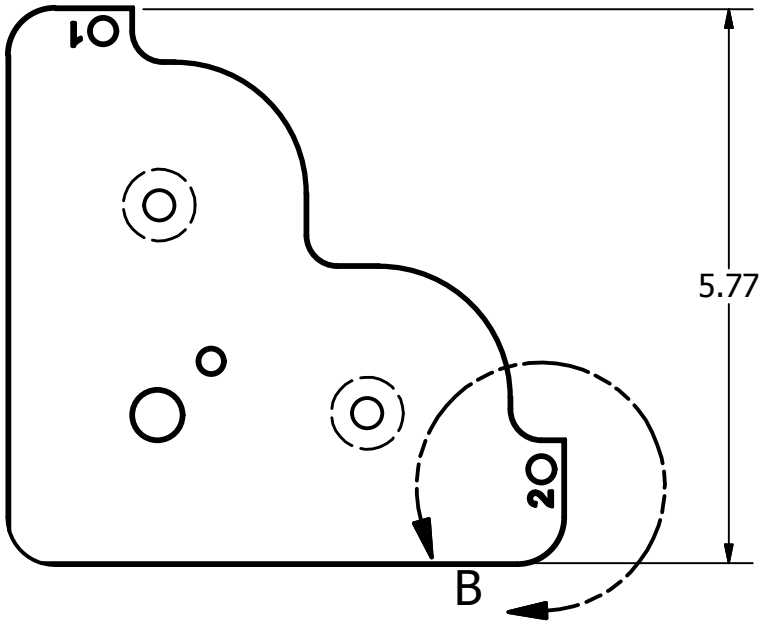


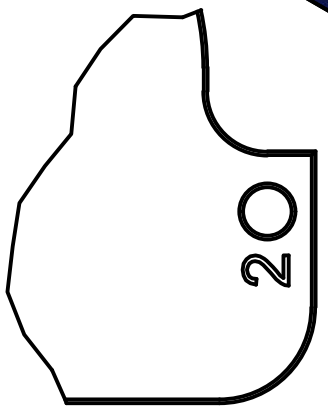


Ladue Horton Watkins High School					
TITLE: PartA5 5-16-18 Nut.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 4:1	SHEET: 18	SIZE: A	



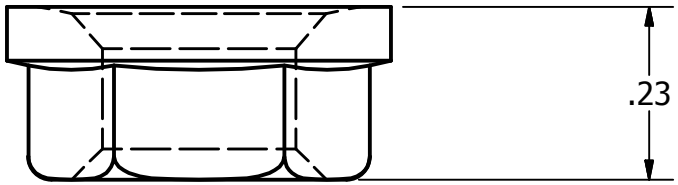


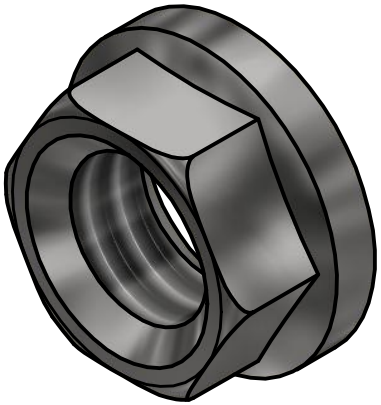


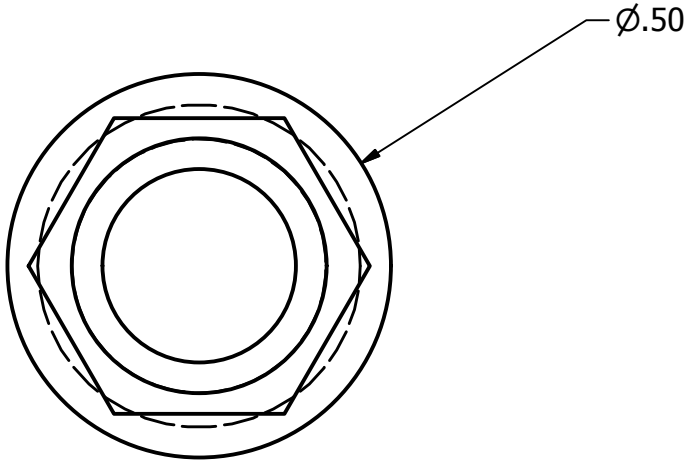


DETAIL B
SCALE 1 : 1

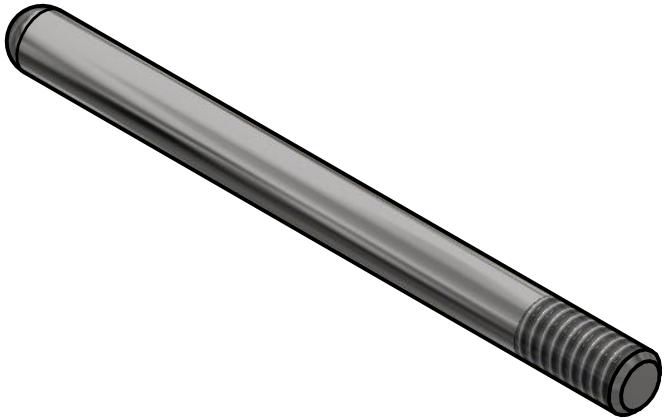
Ladue Horton Watkins High School				
TITLE: PartB1 Bottom Die Plate Modified.ipt		PROJECT:		
DRAWN BY: acramblitt85		DATE: 4/26/15		
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 1:1	SHEET: 19	SIZE: A

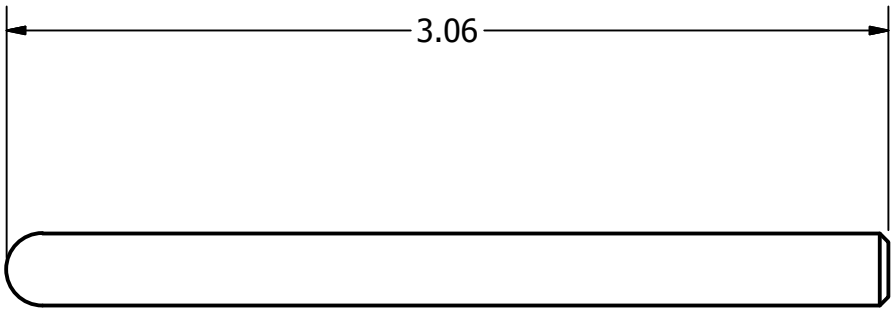


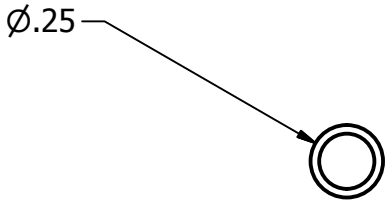




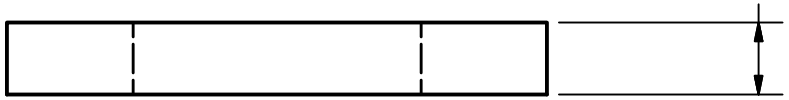
Ladue Horton Watkins High School					
TITLE: PartB2 5_16x1 Nut.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/26/15			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 4:1	SHEET: 20	SIZE: A	

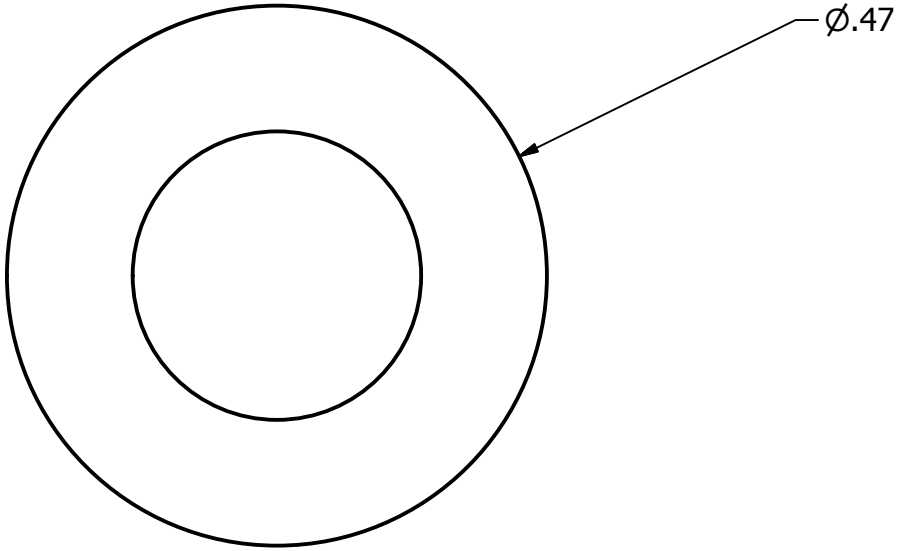




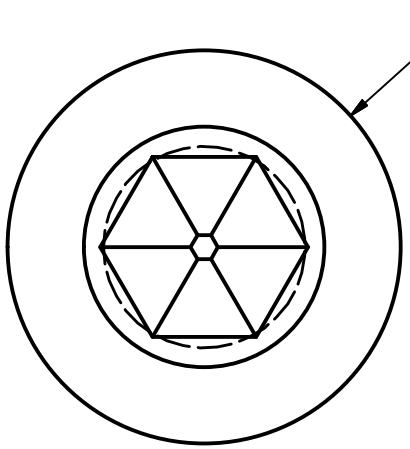


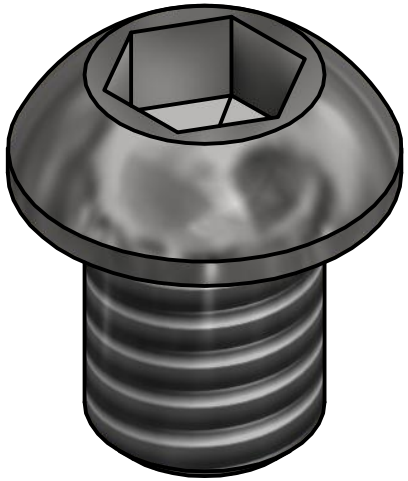
Ladue Horton Watkins High School					
TITLE: PartB3 Sequence Lever Arm.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 3:2	SHEET: 21	SIZE: A	

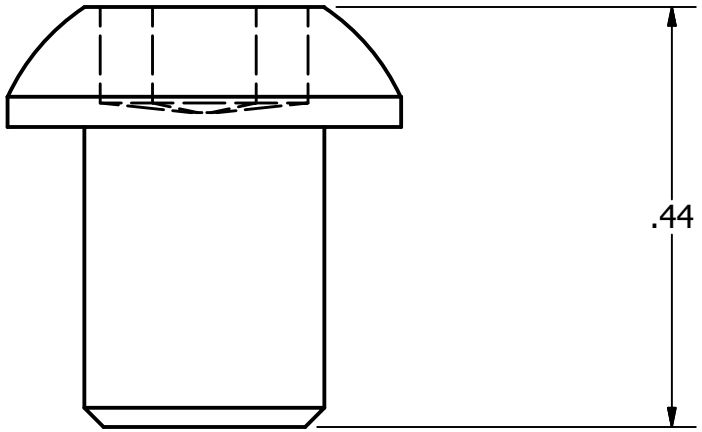




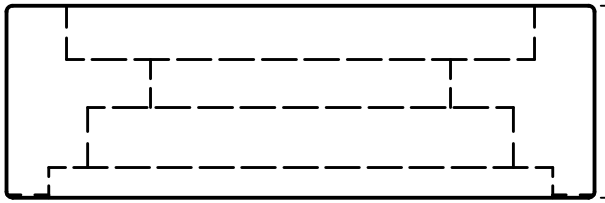
Ladue Horton Watkins High School					
TITLE: PartB4 1-4 Washer.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 6:1	SHEET: 22	SIZE: A	

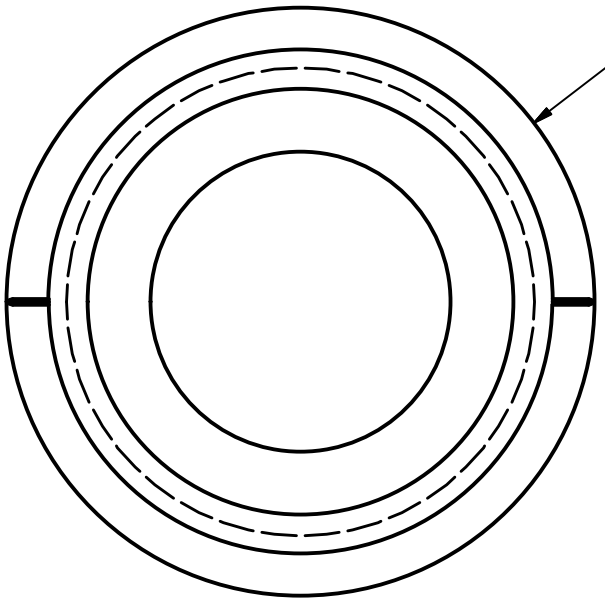




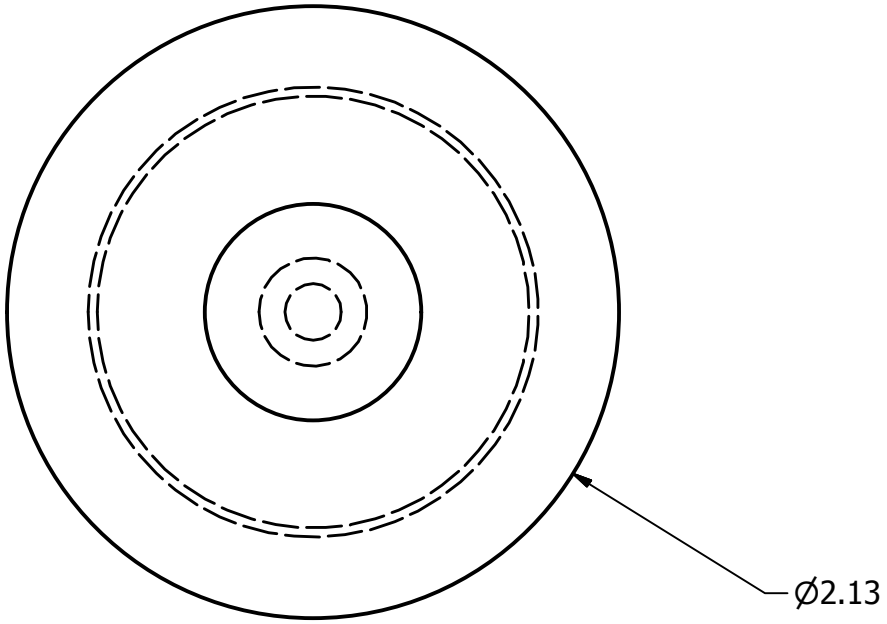


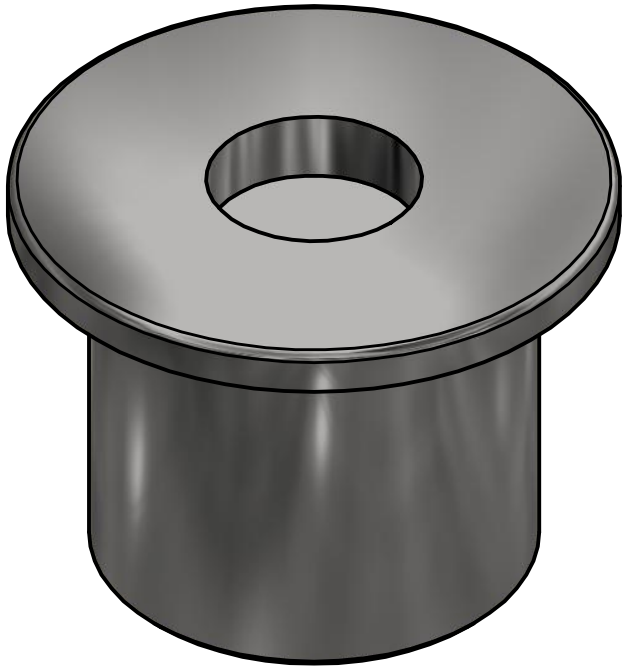
Ladue Horton Watkins High School					
TITLE: PartB5 1-4-20x5-16 Button Cap.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 5:1	SHEET: 23	SIZE: A	

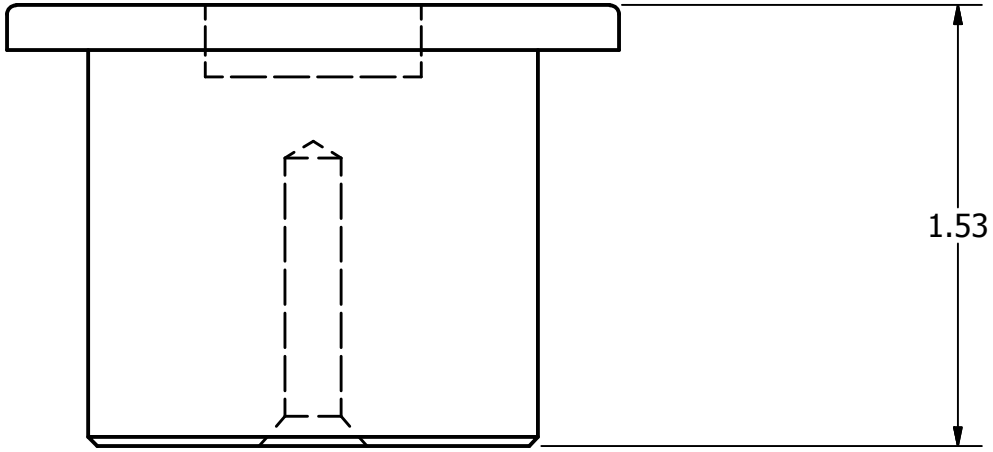




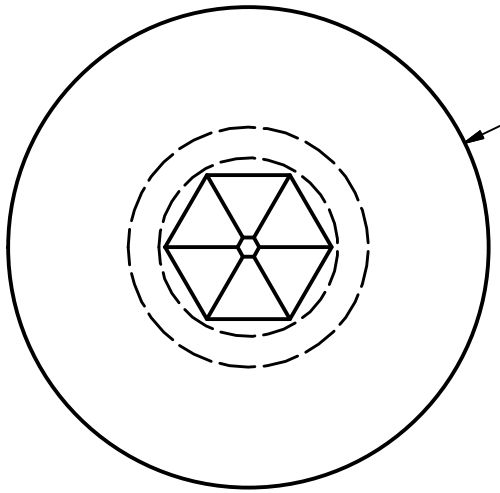
Ladue Horton Watkins High School					
TITLE: PartB6 Lower Die 1 Outer Ring.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 1:1	SHEET: 24	SIZE: A	

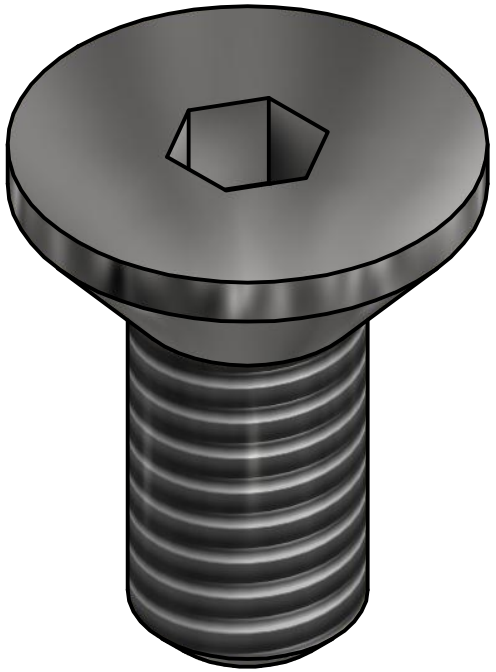


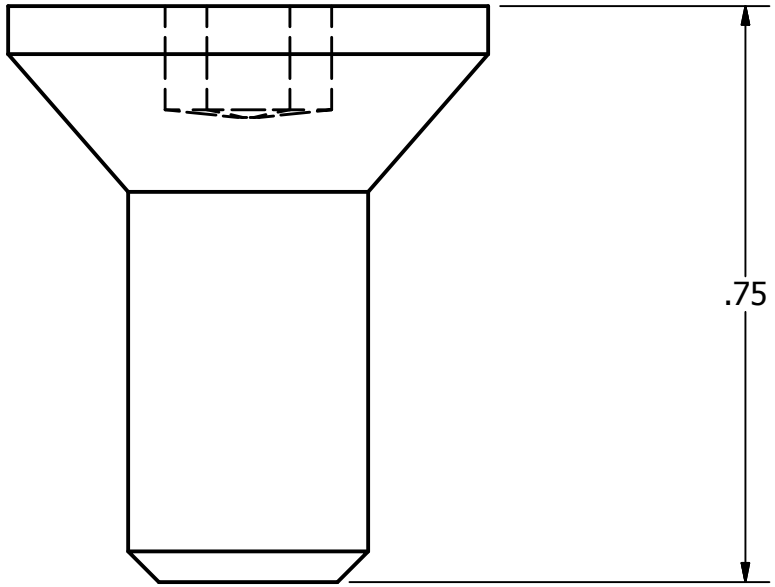




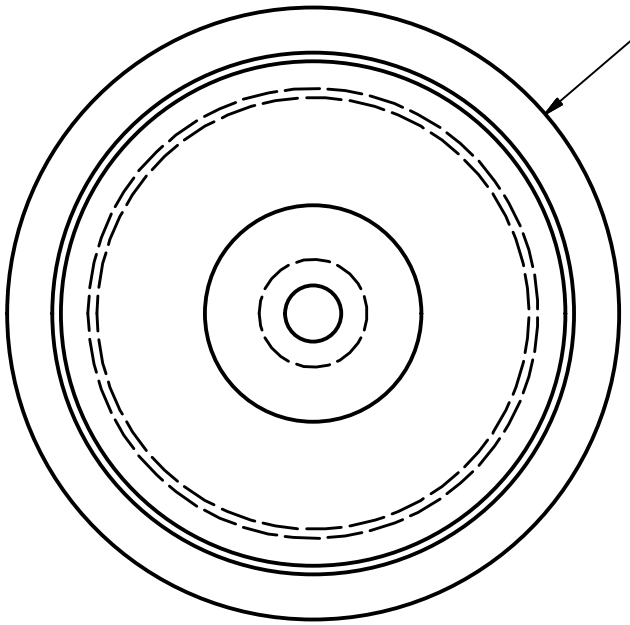
Ladue Horton Watkins High School					
TITLE: PartB7 Lower Die 1 Center.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 1:1	SHEET: 25	SIZE: A	

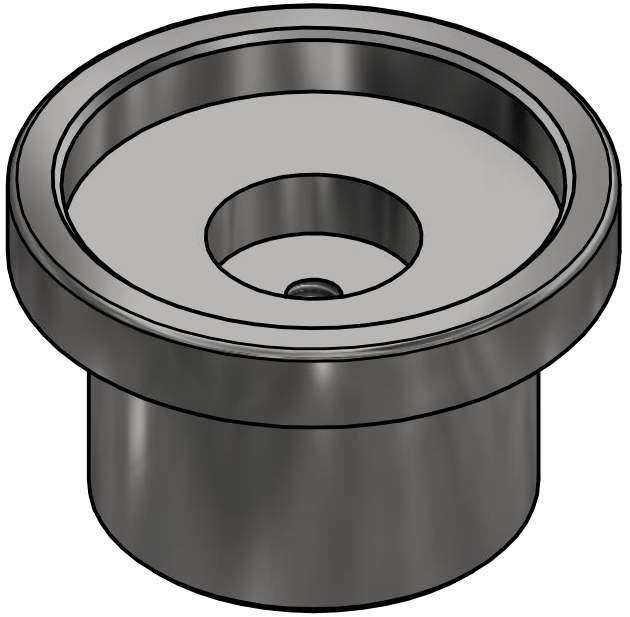


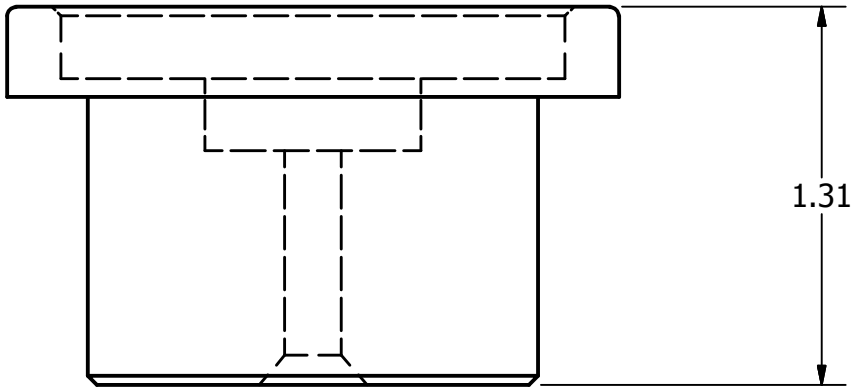




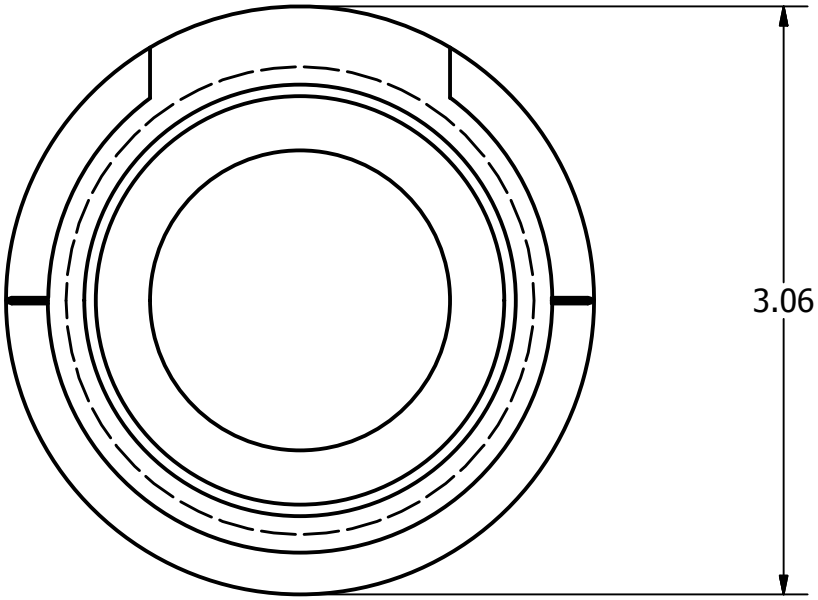
Ladue Horton Watkins High School					
TITLE: PartB8 1-4-20 Socket Screw.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS X.X ± 0.1 X.XX ± 0.01 X.XXX ± 0.001	SCALE: 4:1	SHEET: 26	SIZE: A	

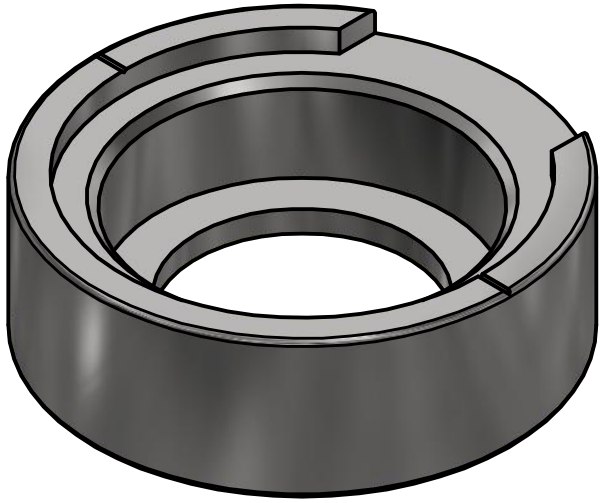


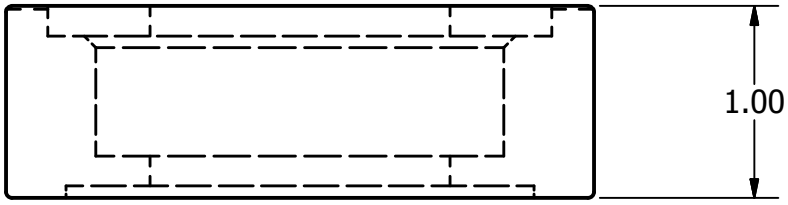




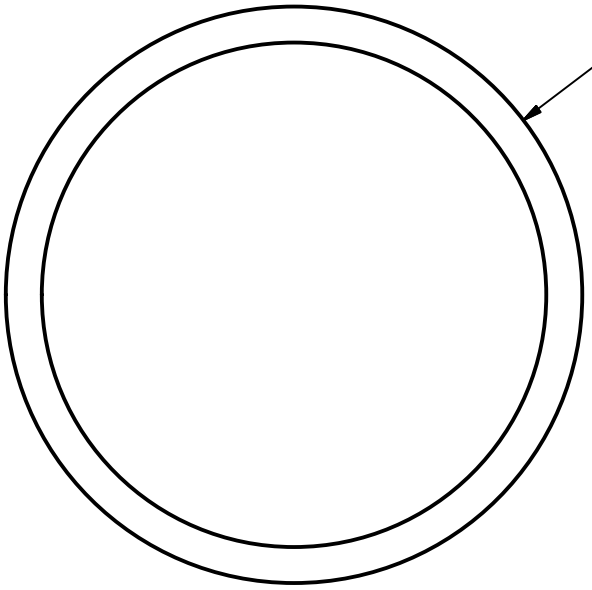
Ladue Horton Watkins High School					
TITLE: PartB9 Lower Die 2 Center.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 3:2	SHEET: 27	SIZE: A	



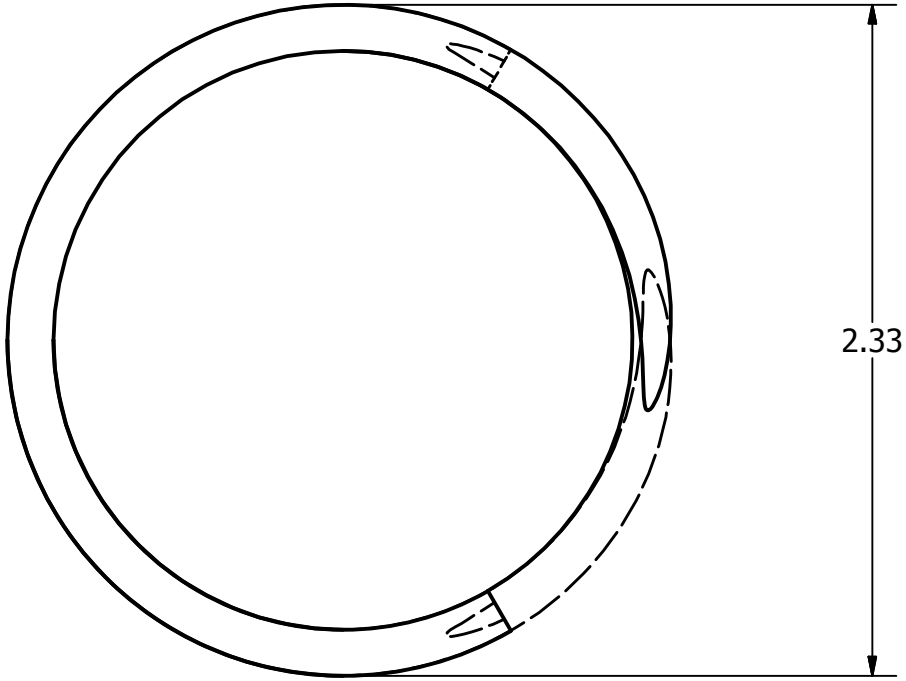


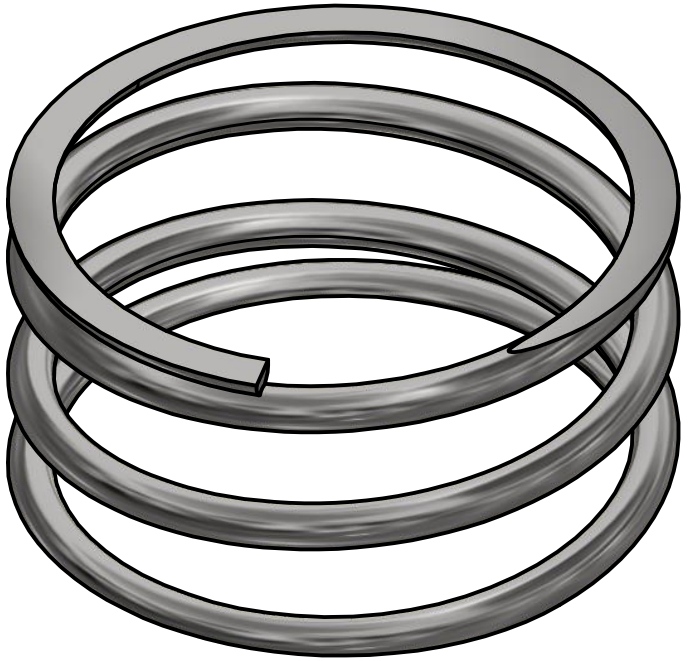


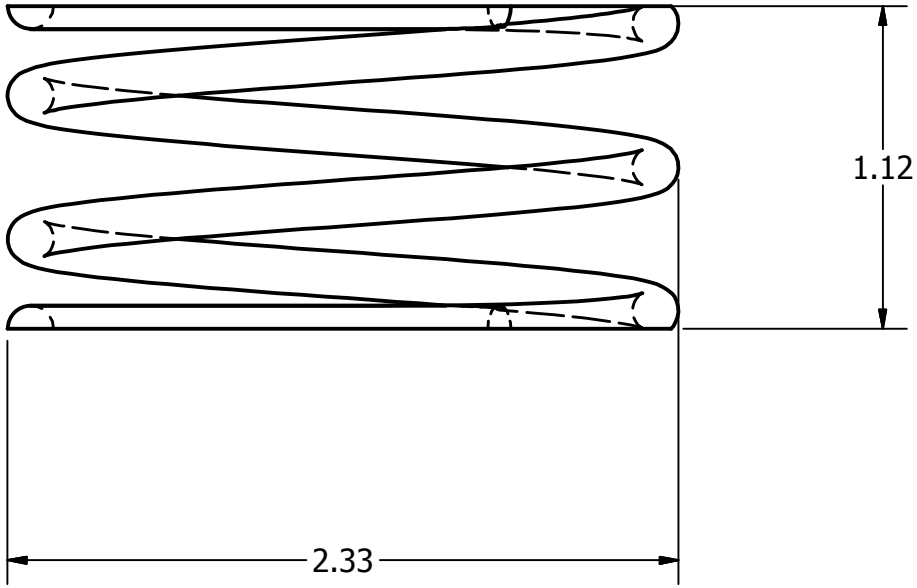
Ladue Horton Watkins High School					
TITLE: Part10 Lower Die 2 Outer Ring.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 1:1	SHEET: 28	SIZE: A	



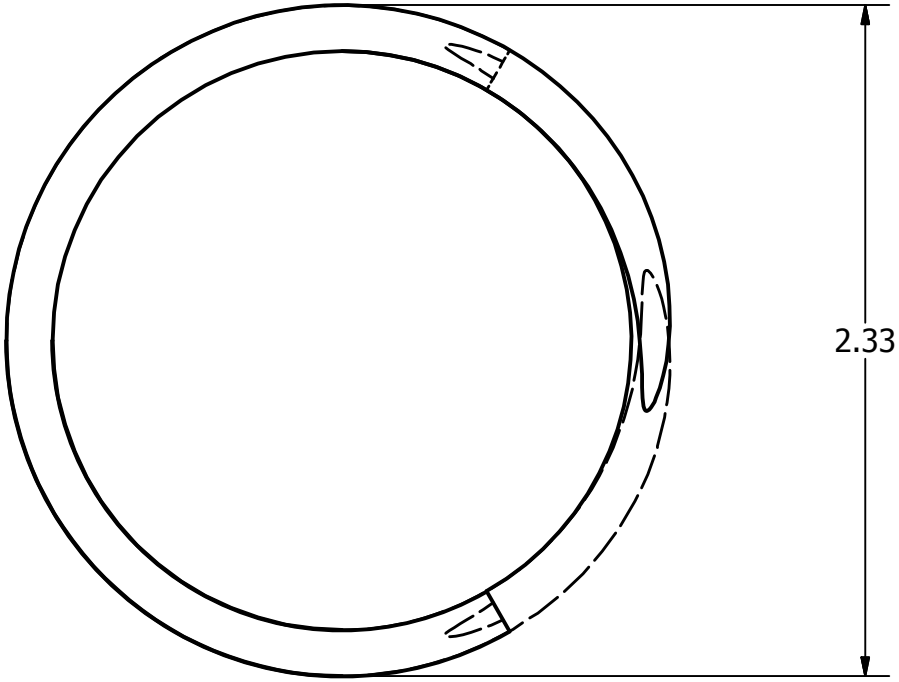
Ladue Horton Watkins High School					
TITLE: PartB11 Lower Die 2 Spacer.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 3:2	SHEET: 29	SIZE: A	

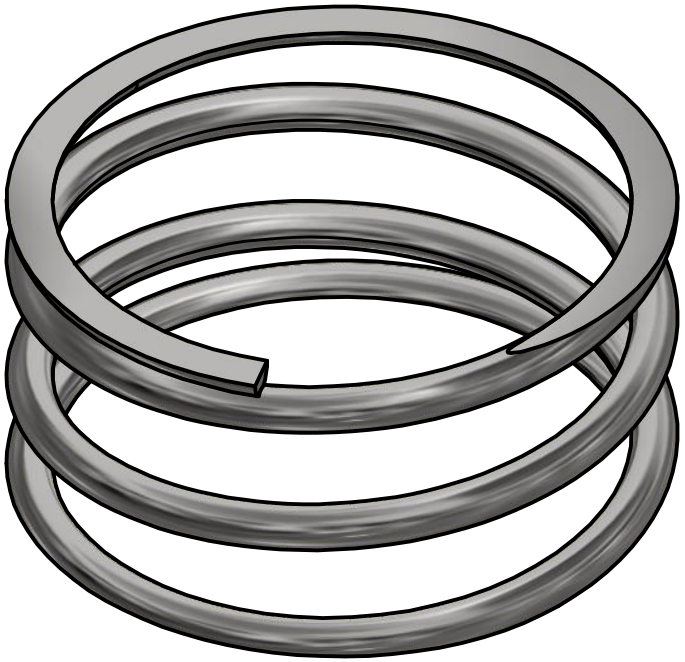


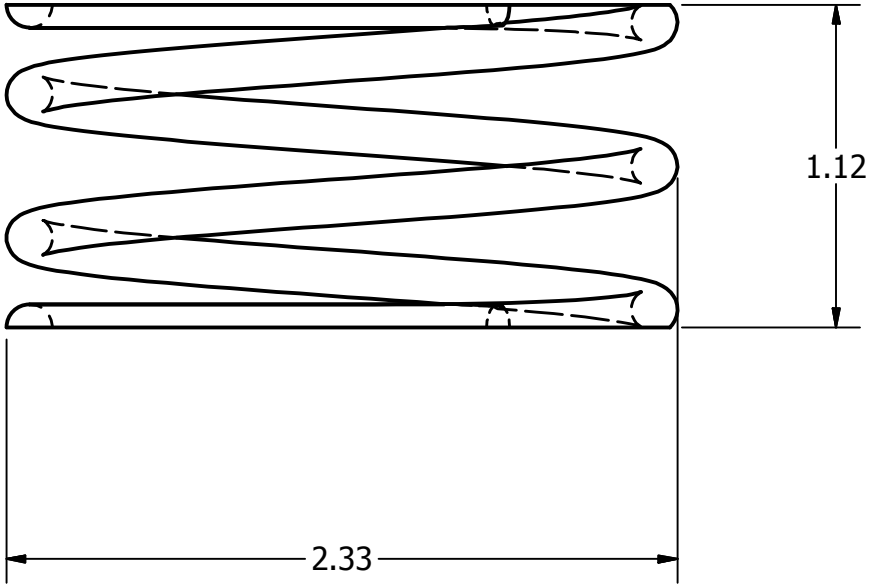




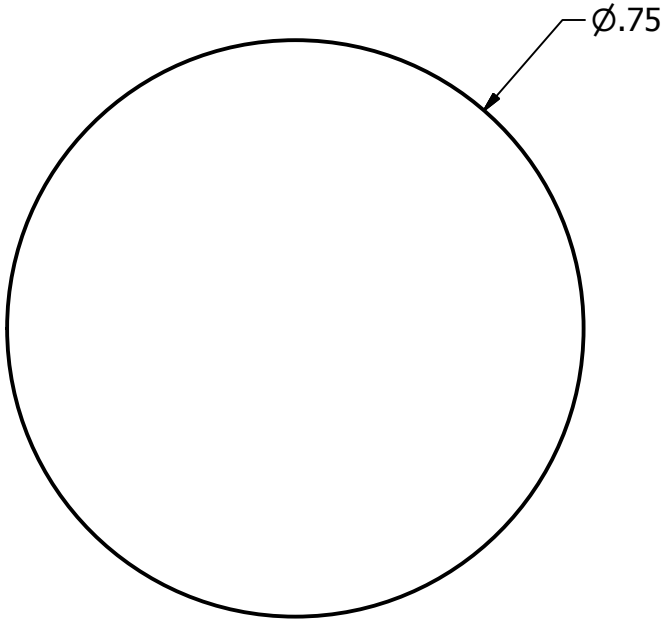
Ladue Horton Watkins High School					
TITLE: PartB12 Bottom Die Spring 1.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 3:2	SHEET: 30	SIZE: A	

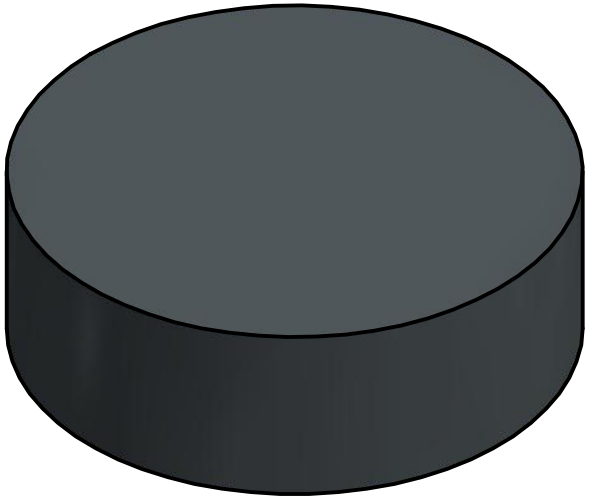




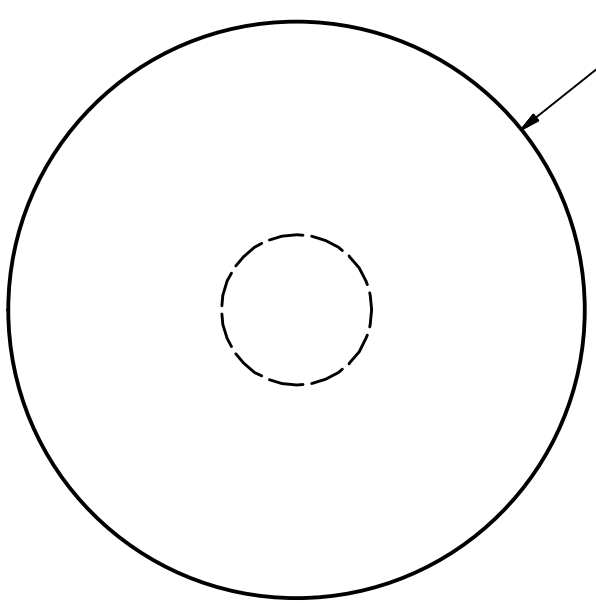


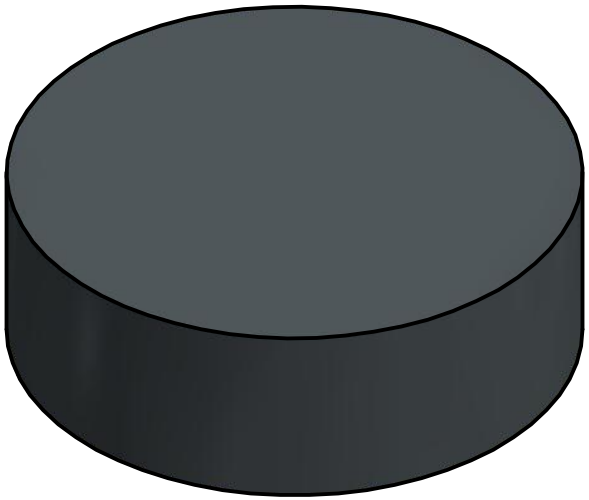
Ladue Horton Watkins High School					
TITLE: PartB12 Bottom Die Spring 1.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 3:2	SHEET: 31	SIZE: A	

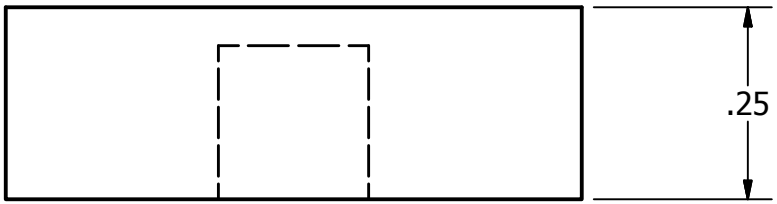




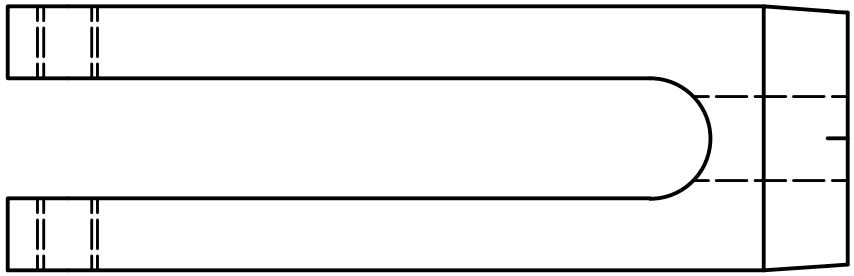
Ladue Horton Watkins High School					
TITLE: PartB14 Magnet 1.ipt		PROJECT:			
DRAWN BY: acramblitt85		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 4:1	SHEET: 32	SIZE: A	

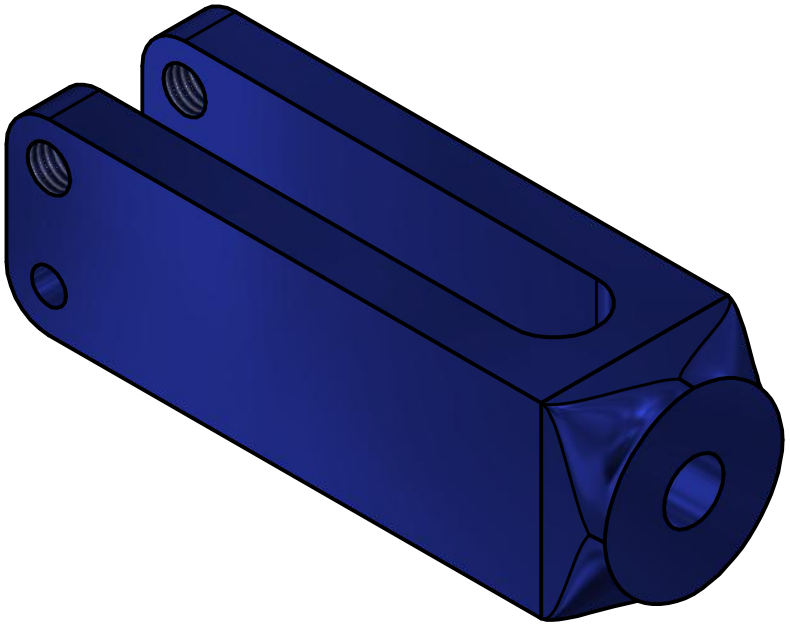


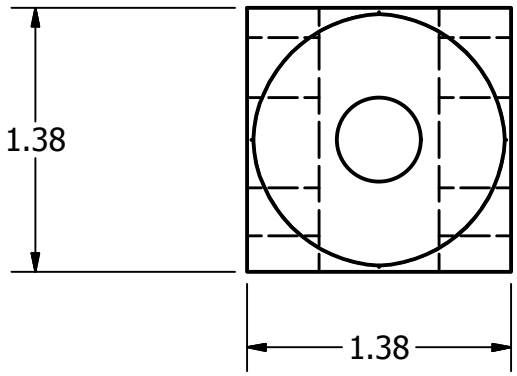




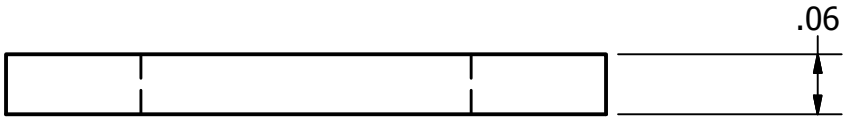
Ladue Horton Watkins High School					
TITLE: PartB15 Magnet 2.ipt		PROJECT:			
DRAWN BY: acramblitt85		DATE: 4/26/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 4:1	SHEET: 33	SIZE: A	

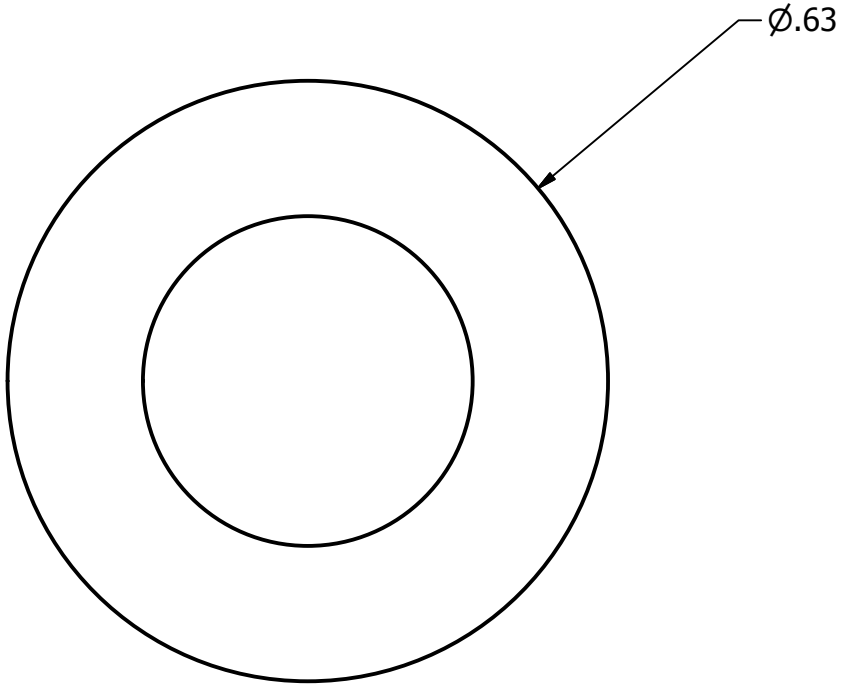


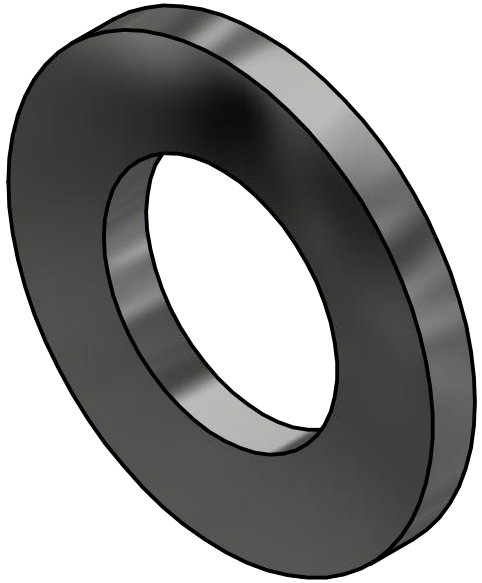




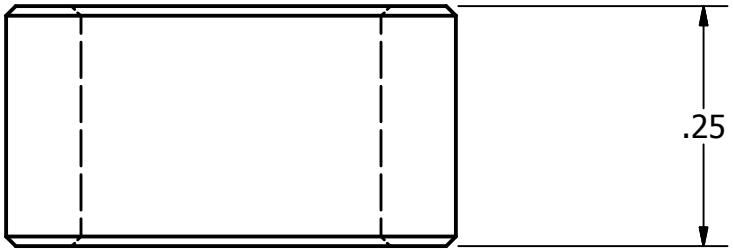
Ladue Horton Watkins High School					
TITLE: PartC1 Handle Body.ipt		PROJECT:			
DRAWN BY: acramblitt85		DATE: 4/27/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 1:1	SHEET: 34	SIZE: A	

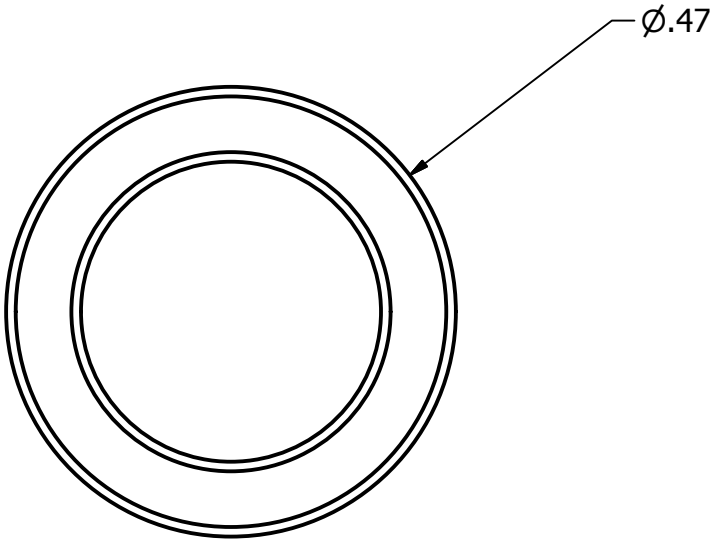


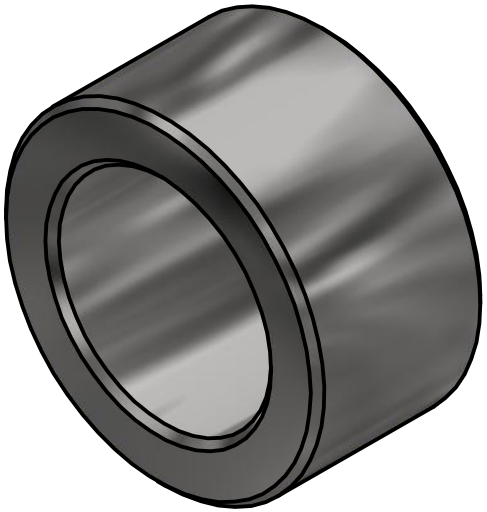




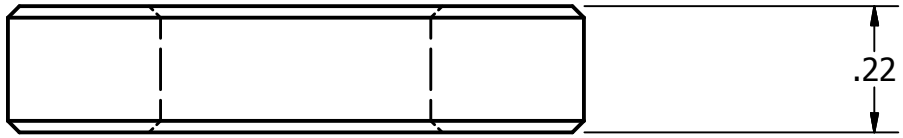
Ladue Horton Watkins High School					
TITLE: PartC2 Roller Spacer.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/27/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 5:1	SHEET: 35	SIZE: A	

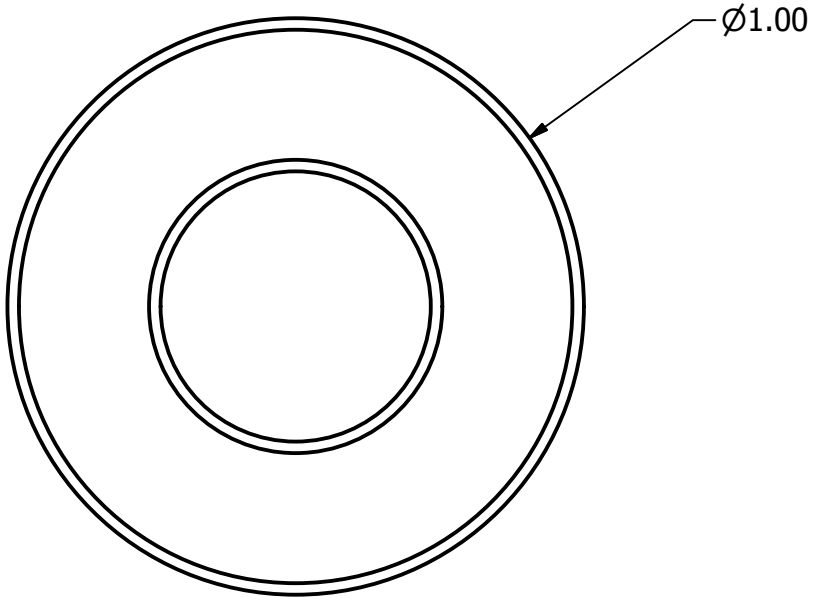




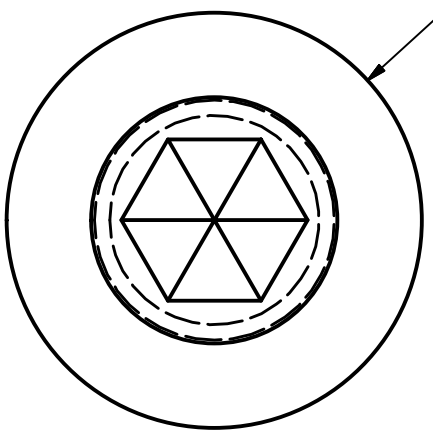


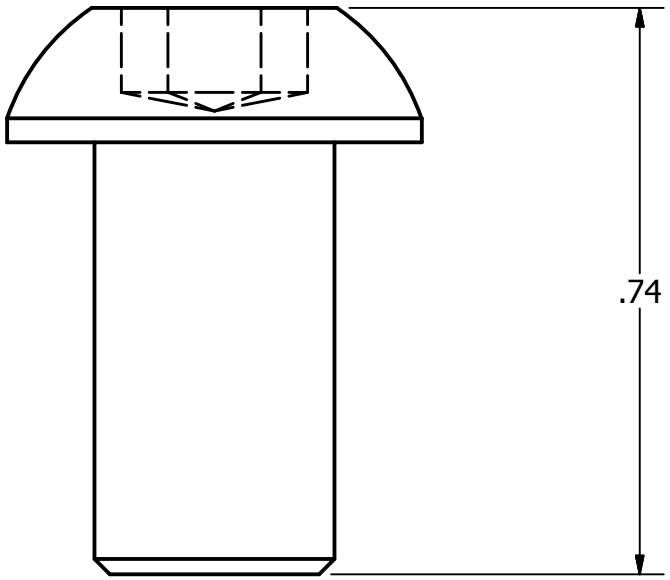
Ladue Horton Watkins High School					
TITLE: PartC3 Roller Inner Bearing.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/27/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 5:1	SHEET: 36	SIZE: A	

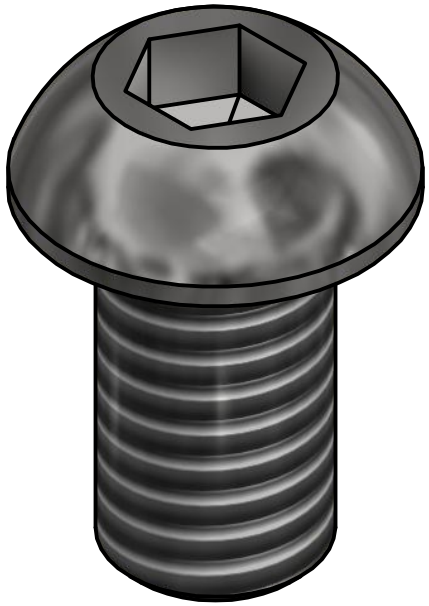




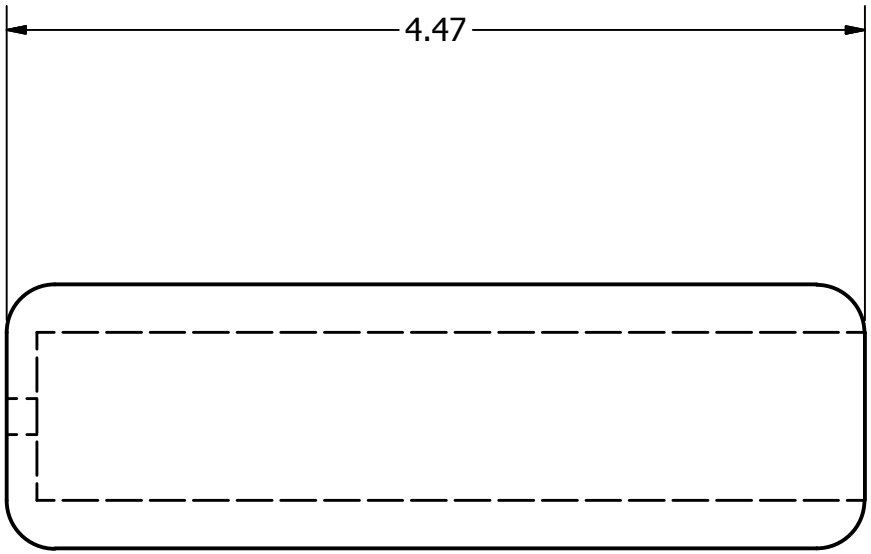
Ladue Horton Watkins High School					
TITLE: PartC4 Roller Outer Bearing.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/27/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 3:1	SHEET: 37	SIZE: A	

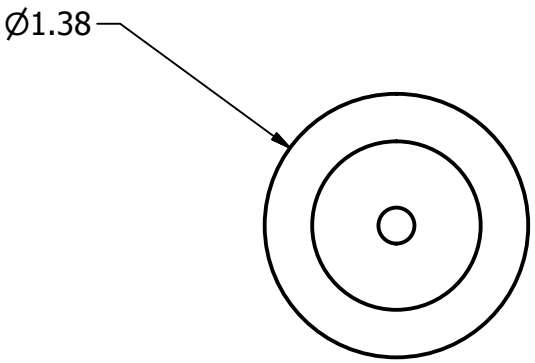




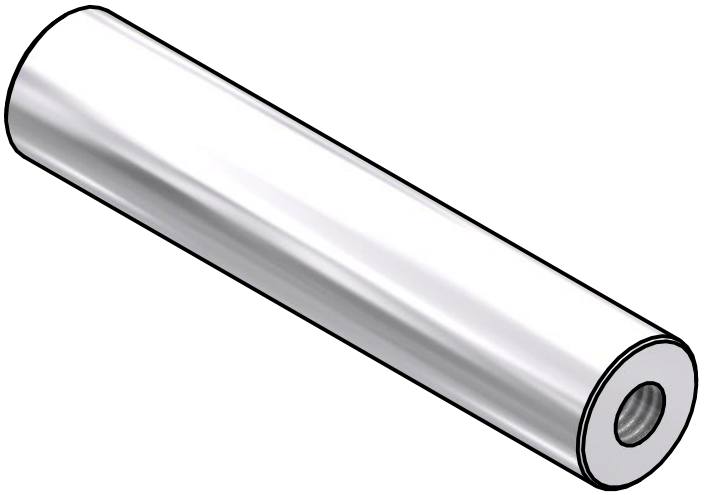


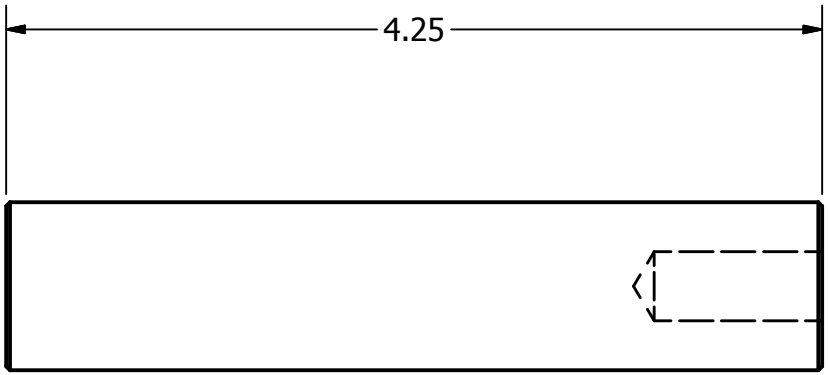
Ladue Horton Watkins High School					
TITLE: PartC5 5_16x1_25 Button Cap.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/27/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 4:1	SHEET: 38	SIZE: A	

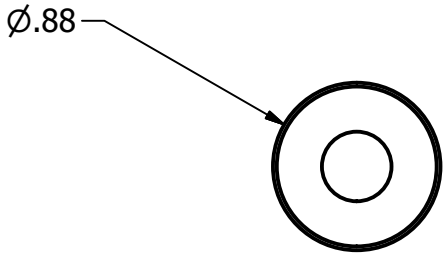




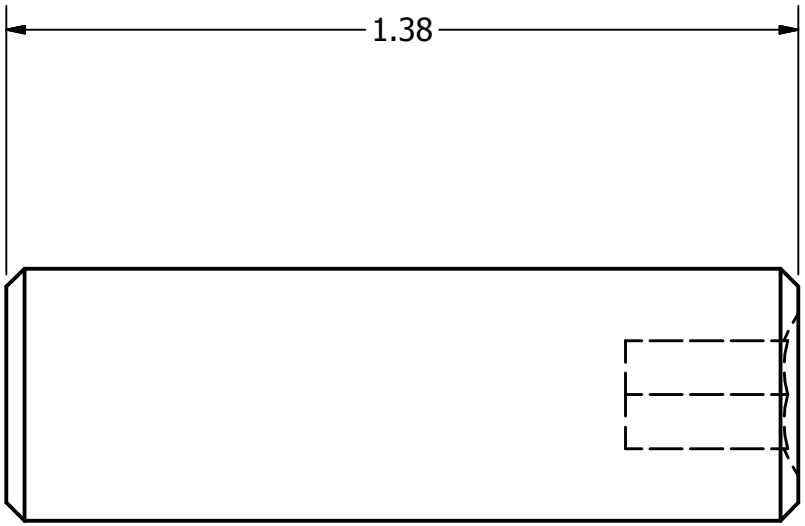
Ladue Horton Watkins High School					
TITLE: PartC6 Rubber Handle Sleeve.ipt		PROJECT:			
DRAWN BY: acramblitt85		DATE: 4/27/16			
LADUE ENGINEERING	GENERAL DIMENSIONS X.X ± 0.1 X.XX ± 0.01 X.XXX ± 0.001	SCALE: 1:1	SHEET: 39	SIZE: A	

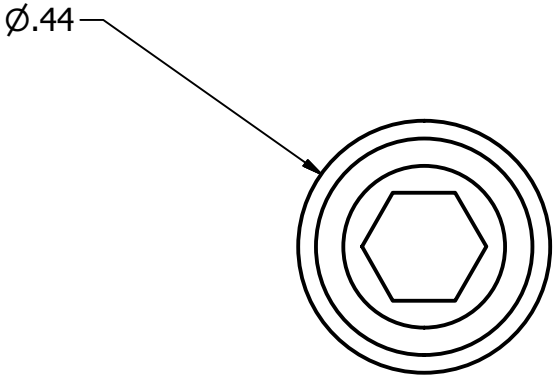




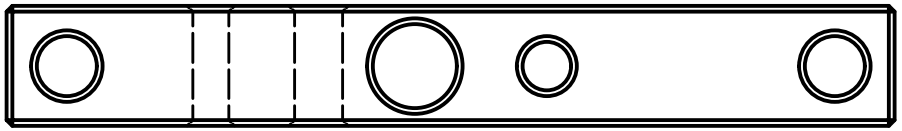


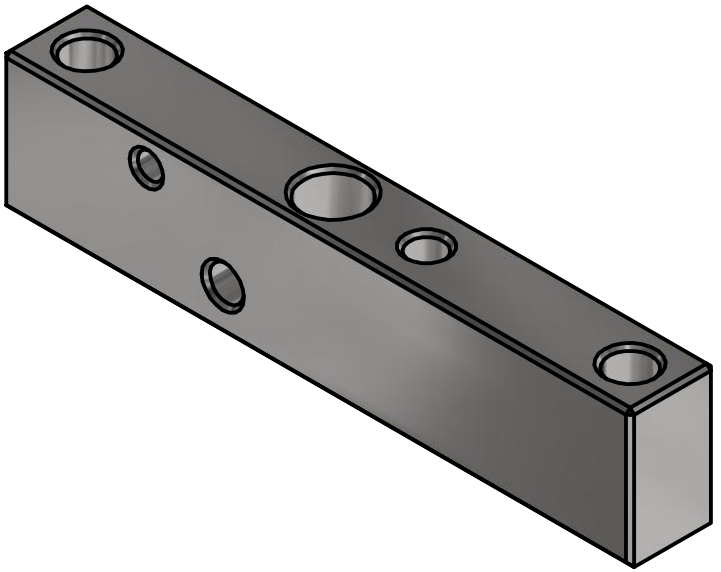
Ladue Horton Watkins High School					
TITLE: PartC7 Metal Handle Insert.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 4/27/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 1:1	SHEET: 40	SIZE: A	

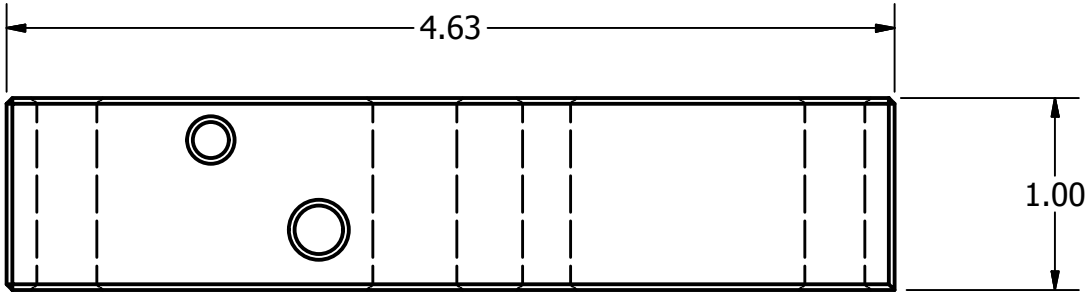


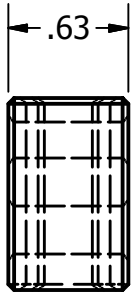


Ladue Horton Watkins High School				
TITLE: PartC8 4-7-16-14 Socket Set Screw.ipt		PROJECT:		
DRAWN BY: jhanson2		DATE: 4/27/16		
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 3:1	SHEET: 41	SIZE: A

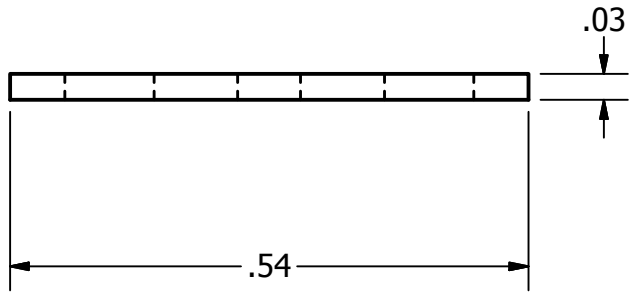


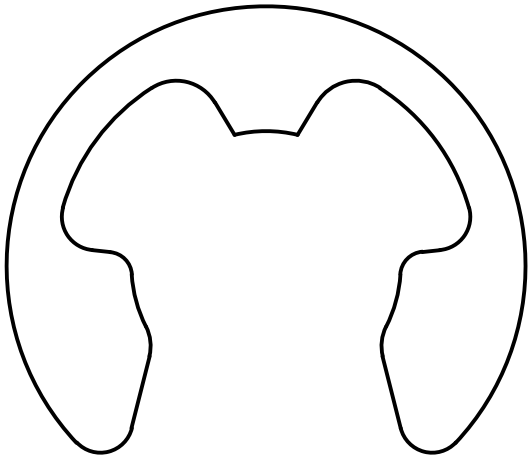


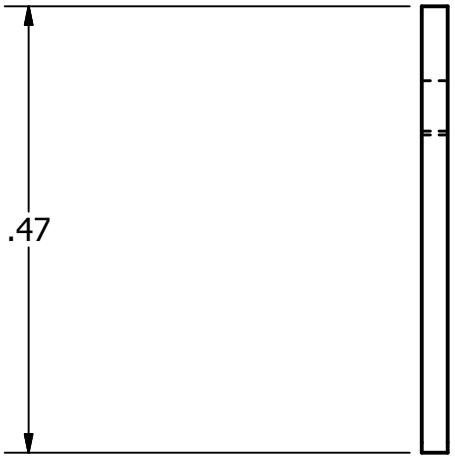




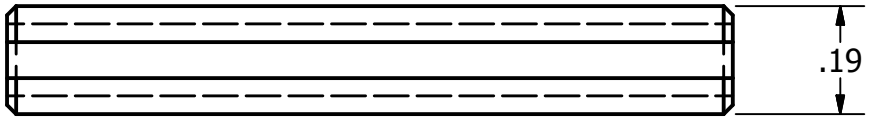
Ladue Horton Watkins High School					
TITLE: PartD1 Upper Die Center Support.ipt		PROJECT:			
DRAWN BY: acramblitt85		DATE: 5/1/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 1:1	SHEET: 42	SIZE: A	

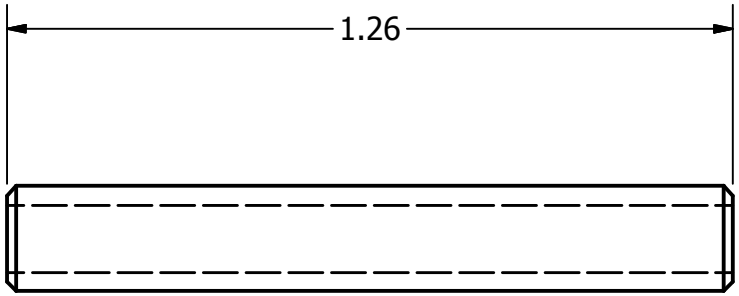


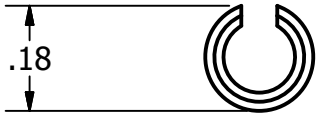




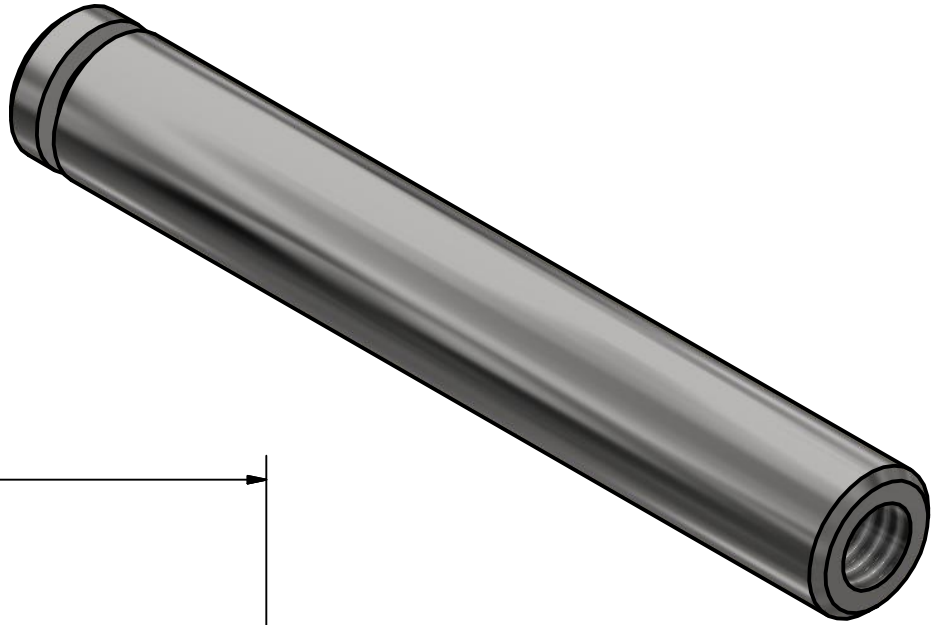
Ladue Horton Watkins High School					
TITLE: Part2 Large Snap Ring.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 5/2/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 5:1	SHEET: 43	SIZE: A	

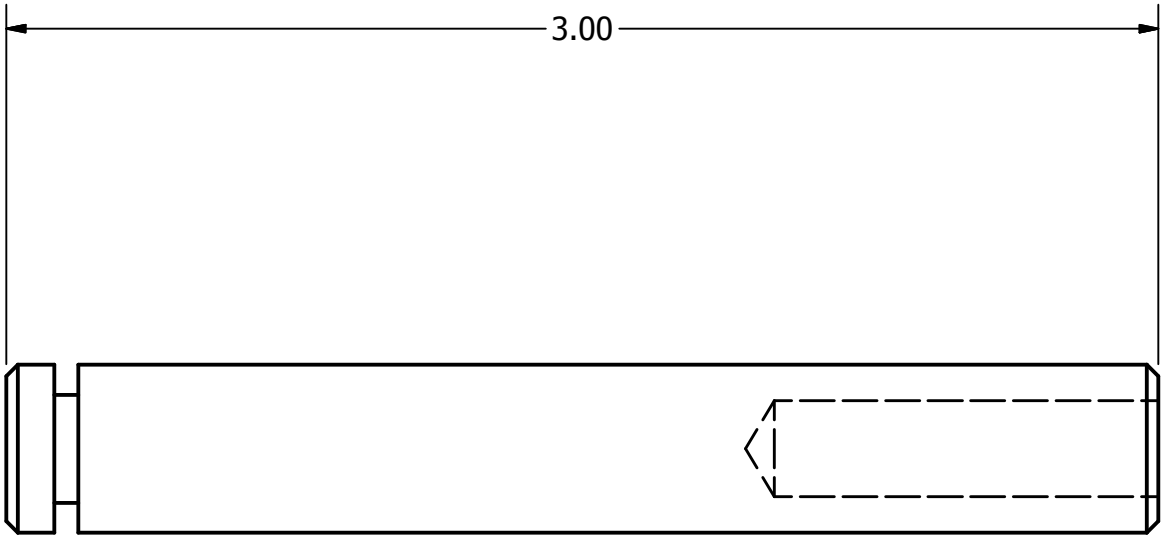


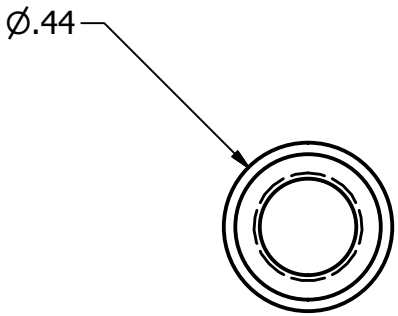




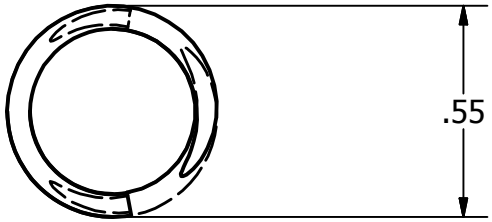
Ladue Horton Watkins High School					
TITLE: ~~PartD3 Handle~~ Rentention Roll		PROJECT:			
DRAWN BY: ~~Pin.ipt~~ jhanson2		DATE: 5/2/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 3:1	SHEET: 44	SIZE: A	

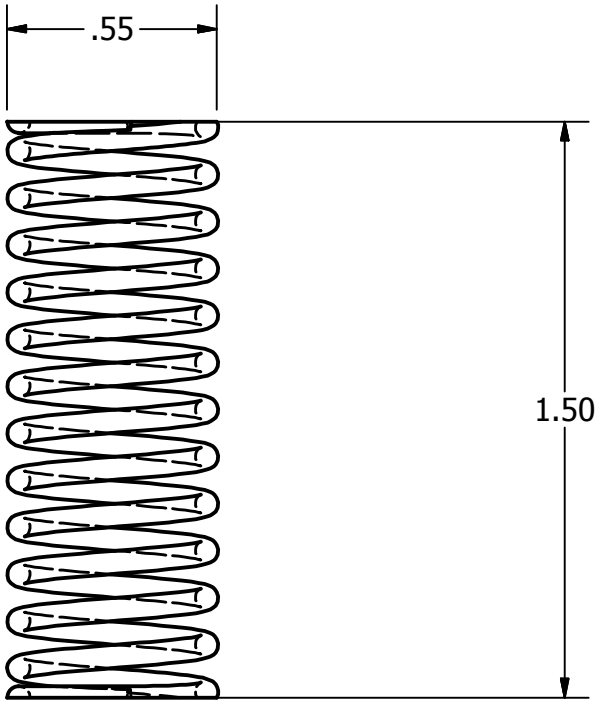




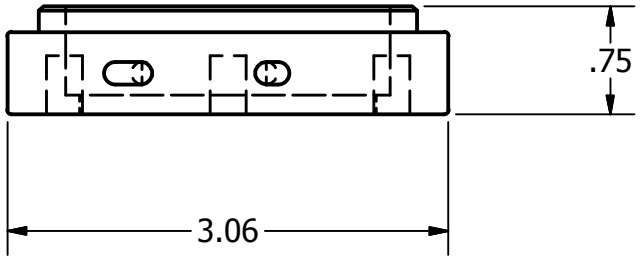


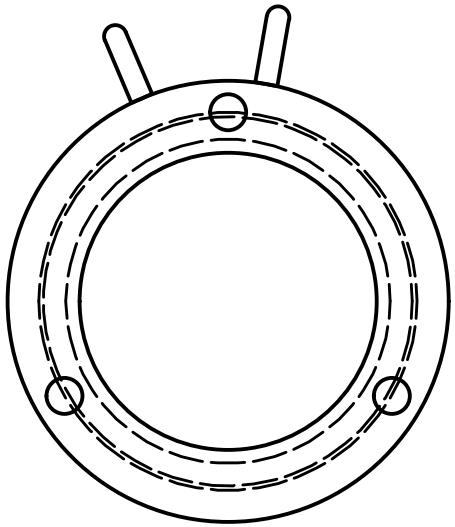
Ladue Horton Watkins High School					
TITLE: PartD4 Upper Die Center Pin.ipt		PROJECT:			
DRAWN BY: acramblitt85		DATE: 5/2/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 2:1	SHEET: 45	SIZE: A	

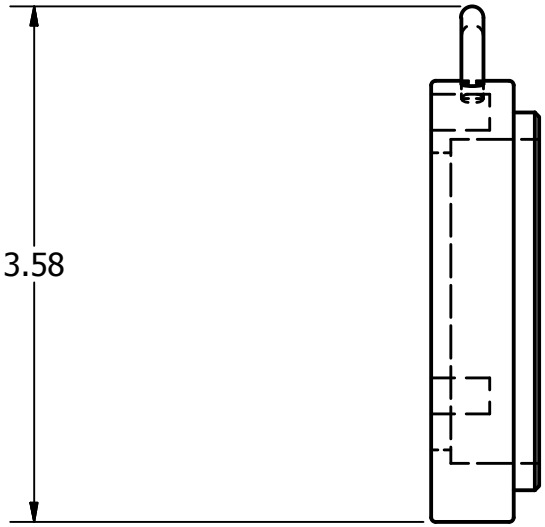




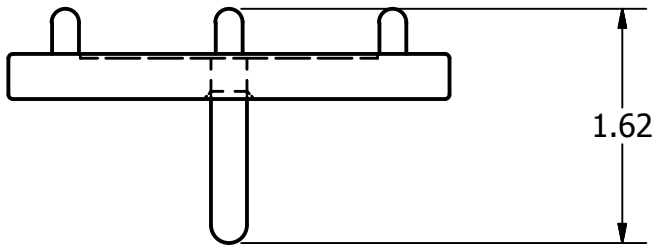
Ladue Horton Watkins High School					
TITLE: PartD5 Upper Die Spring.ipt			PROJECT:		
DRAWN BY: jhanson2			DATE: 5/2/16		
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001		SCALE: 2:1	SHEET: 46	SIZE: A

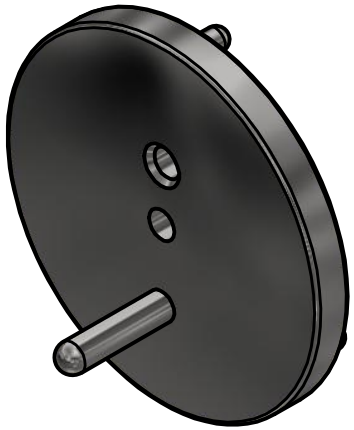


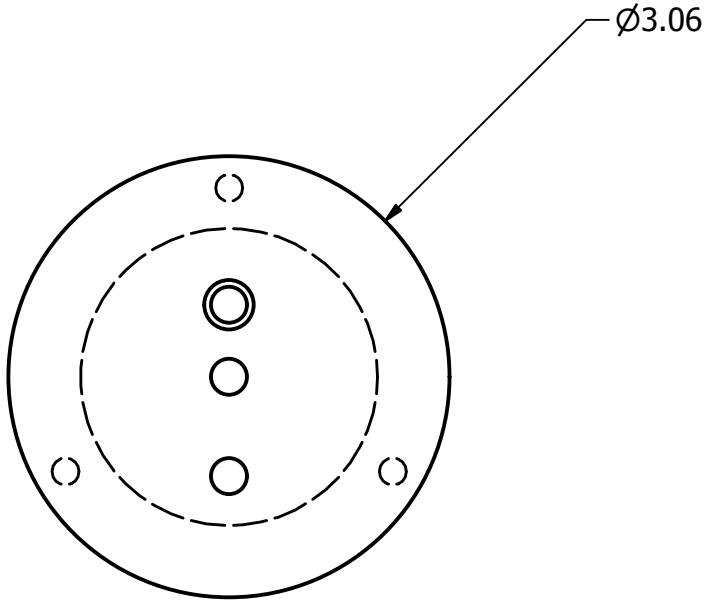


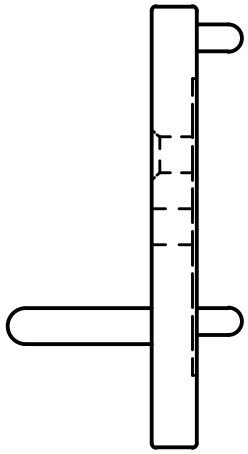


Ladue Horton Watkins High School					
TITLE: PartD6 Upper Die Outer Ring.ipt		PROJECT:			
DRAWN BY: acramblitt85		DATE: 5/2/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 3:4	SHEET: 47	SIZE: A	

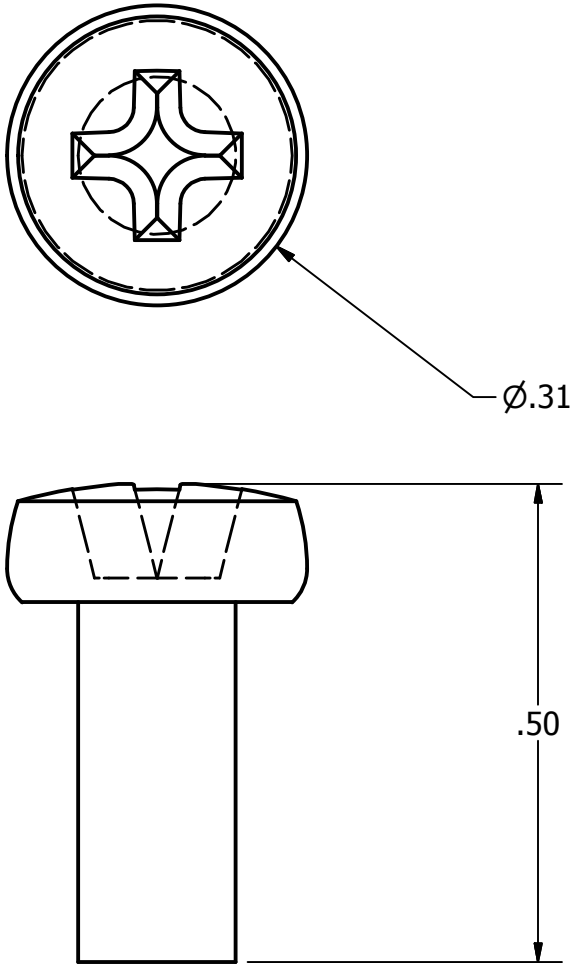


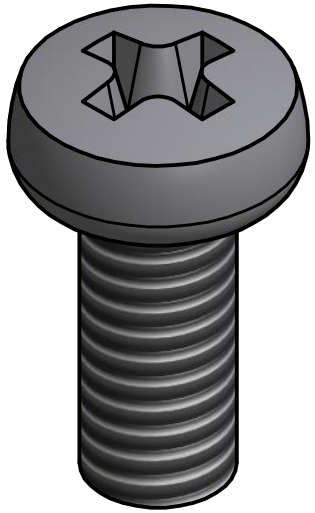






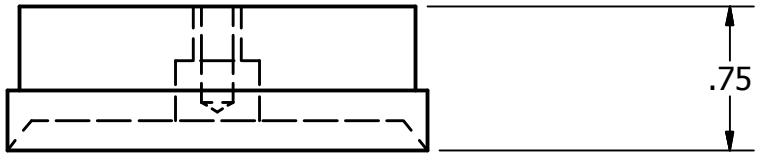
Ladue Horton Watkins High School					
TITLE: PartD7 Upper Die Pressure Ring.ipt		PROJECT:			
DRAWN BY: acramblitt85		DATE: 5/2/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 3:4	SHEET: 48	SIZE: A	

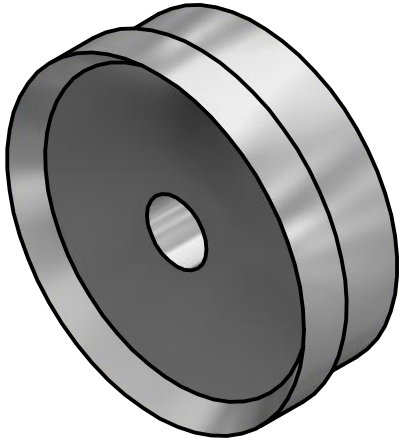


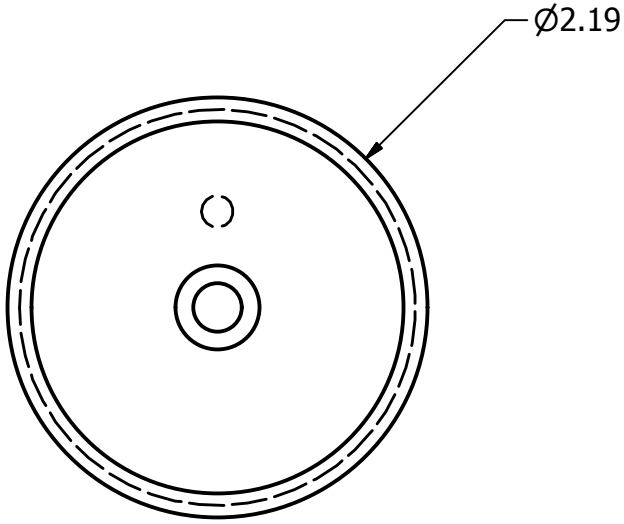


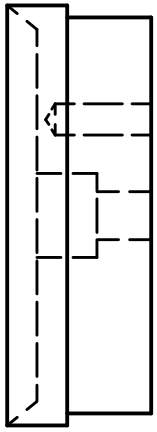
Ladue Horton Watkins High School	
TITLE: PartD8 8-32 UNC Screw.ipt	PROJECT:
DRAWN BY: jhanson2	DATE: 5/2/16

LADUE ENGINEERING	GENERAL DIMENSIONS: x.x ± 0.1, x.xx ± 0.01, x.xxx ± 0.001	SCALE: 5:1	SHEET: 49	SIZE: A

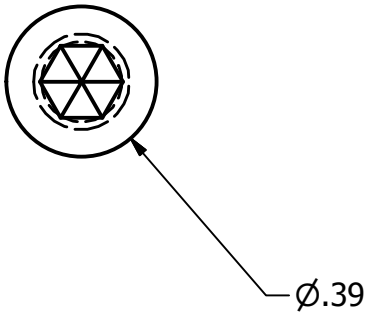


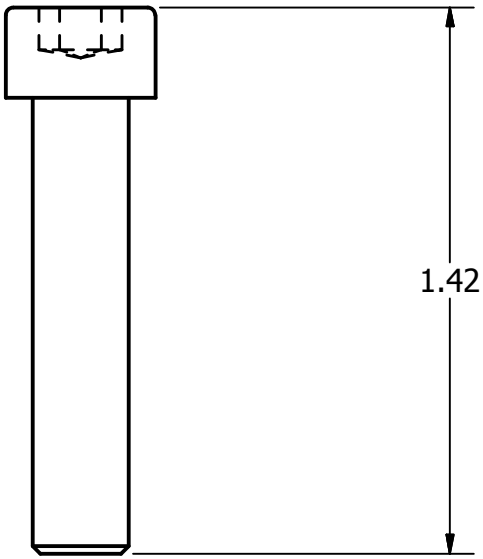






Ladue Horton Watkins High School				
TITLE: PartD9 Upper Die Center.ipt		PROJECT:		
DRAWN BY: acramblitt85		DATE: 5/2/16		
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 3:4	SHEET: 50	SIZE: A





Ladue Horton Watkins High School					
TITLE: PartD10 1_4x1 Socket Head.ipt		PROJECT:			
DRAWN BY: jhanson2		DATE: 5/2/16			
LADUE ENGINEERING	GENERAL DIMENSIONS x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.001	SCALE: 2:1	SHEET: 51	SIZE: A	